NOTES ON PRACTICE.

SYLLABUS OF NOTES

FROM

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ON THE

THEORY AND PRACTICE OF MEDICINE

DELIVERED BEFORE THE STUDENTS OF THE UNIVERSITY
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STUDENTS IN THE UNIVERSITY

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PREFACE.

This little work being simply a reproduction of a student's private note-book, which through the kind courtesy of Dr. Pepper he has received permission to submit to his fellow students in a printed form, it must be understood that for all inaccuracies and misrepresentations of the lecturer's actual statements which may be found therein, the compiler alone is directly responsible.

CUTHBERT BOWEN.

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The functional nervous diseases are very numerous & have symptoms which cannot be associated with definite anatomical lesions,

Conditions associated with Functional Diseases are
I Anaemia III Impaired Nutrition
II Congestion IV Hysteria

One functional change may cause a perversion of all the functions.

Anaemia of the brain (cannot be recognized by the microscope) may cause serious trouble which lasts a life time

Impaired nutrition is a vague term and means impaired nutrition of the protoplasm of the nerve-cells which causes undue sensibility, exaggeration of the reflexes &c.

In hysterical cases there is defective will power & control which sometimes increases Irritability & Anaemia

PART I.

I. DISEASES OF THE NERVOUS SYSTEM.

Nervous Diseases may be divided into two main classes. 1. *Functional*, in which we have a disturbance of the part, but are unable to observe any anatomical changes in the structure of the nerve substance. 2. *Organic*, which are associated with definite anatomical change. It may be doubted, however, whether there is not always present some minute change in the structure of the nerve, even though we are not able to detect it microscopically. Of nervous diseases those which we are accustomed to regard as *Functional* are by far the more numerous. We may further divide the diseases of the Nervous System into Acute and Chronic, using the terms in their ordinary signification.

The **diagnosis** of Nervous Diseases is extremely difficult. *Hysterical patients* simulate the symptoms of the most complex nervous disorders, and this condition must be eliminated first in making a diagnosis. Again, we must ask ourselves whether the symptoms present can be explained as *purely hysterical* or is *hysteria associated with some other nervous disorder*, as is often the case. Neurasthenia may exist either with or without hysteria. This renders the diagnosis extremely difficult and perplexing. *Toxic Agencies* may simulate nervous diseases, *e. g.*, Malaria, Arsenic, Lead and Copper, and the blood-poison of Septic Fever.

All these must be excluded before determining the organic symptoms.

ORGANIC AFFECTIONS.

By the term **Nervous System** we understand the *Brain*, *Spinal Chord* and *Nerve-Trunks*, with their respective *Membranes*. They are cellular, vascular structures, with a more or less fibrous basis. Each portion of the nervous system is subject to distinct diseases. The **Sheaths** of the nerve-trunks are liable to *Perineuritis;* the **Membranes** of the brain and chord to *Meningitis*.

The **Nerve-Cells** are liable to *Degeneration* and *Atrophy;* and, as they exert an influence over nutrition, we find serious diseases following lesions of the cells themselves.

The **Nerve-Fibres** are also liable to lesions produced by inflammation, which may be either *Acute* or *Chronic*. This often ends in destructive changes, *e. g.*, *Abscess* or *Softening*. Sometimes it causes *Contraction*, with *Atrophy of the fibres*, and an *Increase of the Interstitial Connective Tissue*, which we term **Sclerosis.** This is a very common change. *Sclerosis*, however, is not always the result of inflammation. It may result from a slow wasting of the fibres or a slow overgrowth of the tissue, without inflammation.

Thrombosis, Embolism and **Hemorrhage** are frequent accompaniments of nervous diseases. By *Thrombosis* we understand the formation of a clot in a venous trunk. *Embolism* is the plugging of an arterial trunk by a clot or bit of fibrin driven into it. *Hemorrhage* is more common in connection with the brain than with the Spinal Chord. This is also the case with the other two. These three lesions are intimately connected with Softening, which may result from either one of them.

Tumors frequently appear in connection with diseases of the nervous system.

The chief lesions, to enumerate them, may be said to be:—

1. Anæmia,
2. Congestion,
3. Inflammation (Acute or Chronic),
4. Embolism,
5. Thrombosis,
6. Hemorrhage,
7. White Softening, and - much like fatty degeneration
8. Sclerosis.

While we observe that the number of lesions is not very great, we find that the **Symptoms** which they give rise to are extremely numerous. We have:—

I. **Pain** which is very common, and may be either *Centric*, *i. e.*, referred to the line of the nervous system, or *Eccentric*, *i. e.*, referred to other parts. Centric pain, in the case of cerebral disease, is located by the patient in the brain itself. Pains vary extremely in character. We speak of—1. *Girdle pain;* the patient feels hooped in, as by a circle, at the point of the disease. These are examples of what are termed eccentric. 2. *Radiating*, *i. e.*, along the nerve-trunks. 3. *Darting* or irregular. These fulgurant or lightning-like pains are very characteristic of *Locomotor Ataxia.*

II. **Many Disorders of General Sensibility.** 1. *Vertigo*, or Dizziness, is very common. There is a feeling of unsteadiness. The patient cannot balance himself, he feels that surrounding objects are moving while he himself is standing still. 2. *Numbness* in different parts of the body. 3. A feeling often described as "*pins and needles.*" 4. *Formication*, *i. e.*, a sensation as though ants were crawling on the person.

III. **More or less Impairment of Sensation.** 1. *Anæsthesia*, which may be slight or marked. By it is meant the total or partial destruction of sensibility. Contact with a pin may not be perceived—hot and cold are not distinguishable. 2. *Hyperæsthesia*, *i. e.*, exaggeration of sensibility. Of this there are several grades.

IV. **Disorders of the Special Senses.** Among these the—1. **Eyes** furnish most symptoms. We find—1. *Strabismus*, or squint. 2. *Photophobia*, which is due to an exaggerated sensibility of the Retina. 3. *Hemiopia;* and 4. *Double Sight.* 5. *Impairment of Vision* in some form or the other is very common, and must be looked for. Again, the vision is sometimes very well preserved, even when, 6. *Changes in the Optic Nerve or Retina* are revealed by the opthalmoscope, 7. *Inflammation* and *Atrophy of the Optic Nerve;* and 8. *Wasting of the Retina* are often indicative of brain trouble.

2. Subjective sounds are referred to the **Ears.** Patients complain of *Tinnitus.* 3. We also have impairment of **Taste** and **Smell.** These, however, are not of very much moment.

V. **Disorders of Motion.** *Paralysis*, *i. e.*, loss of motor nerve power. This is independent of the muscles. A joint may be anchylosed, or a muscle be wasted, and yet no *paralysis* exist. This may be slight, marked or

absolute. We may have *Local Palsy*, as of the extensors of the forearm (*e. g.*, from lead-poisoning) or of the External Rectus muscle of the eye. *Paralysis of an entire member*, or *Monoplegia*. This term is an objectionable one. *Hemiplegia*, or paralysis of half the body, either with or without the face. *Paraplegia*, or paralysis of the lower half of the body. Some persons cannot walk, yet, if placed on their back, they have full power in their legs. This comes from a want of co-ordination, which we term Ataxia. This may be found in any voluntary muscle whatever, and we must not regard it as a special disease, but only as a symptom. Sclerosis of the posterior columns of the chord is frequently referred to as *Locomotor Ataxia*.

VI. **Various Uncontrollable Movements.** 1. *Fibrillar Contraction.* This is the earliest symptom of Progressive Muscular Atrophy. 2. *Tremor* is an important symptom in connection with disease of the chord. There are certain forms of Functional Tremor, as in Copper-Poisoning. This is entirely different from (3) the Spasmodic Jerking of the involuntary muscles which is seen in Chorea. Tremor is sometimes present when the muscle is not in use, but generally it only manifests itself on exertion.

VII. **Changes in Reflex Action.** Reflex action is a response to stimulation at a distant point. It may be diminished, increased or entirely lost. We generally employ it, under the form of Ankle Clonus and Patella Reflex or knee jerk, in order to determine the existence or absence of certain nervous diseases. Patella Reflex is absent in Locomotor Ataxia. It is increased in irritation of the Motor Columns of the Chord.

VIII. **Changes in the Electrical Condition of Muscles.** This may be impaired, increased or lost. When muscles have undergone degeneration they lose the power of responding to electrical irritation. In health, muscles will not respond to the Galvanic Current as to the Faradic. This may be reversed in case of disease of the nerves. The electrical state of the muscles is a valuable guide in Prognosis.

IX. **Disorders of Circulation and Nutrition.** The extremities may be hot with congestion and redness, or may be deathly cold. In one form of Nerve trouble we have a Pseudo-Hypertrophy of the muscle, though associated with muscular atrophy. In atrophy of the muscles, the Transverse Markings become dim. The fibres become granular. In some cases we find peculiar *Cutaneous Eruptions*, or Herpes. A close relation exists between Eruptions and disease of the nerve-trunks. Clustered Herpes around the trunk with a tendency to spread is associated with injury to the intercostal nerves. Racemose Herpes is associated with the Trifacial Nerve.

X. **Memory** very often fails.

XI. **Disorders of Speech.** These are frequent, and are of great importance. When articulate speech is lost we know we have a lesion in the left side of the brain in a limited area, near the Fissure of Sylvius. This condition is termed Aphasia.

XII. **Convulsions.** These are sudden attacks; with or without unconsciousness, attended with uncontrollable spasmodic movements of various parts. They may themselves last many minutes, and be followed by hours of unconsciousness. They may be confined to a few or extend to many muscles. They are very characteristic of Epilepsy, and occur in many blood-poisons as Scarlet Fever, etc., and accompany many tumors of the brain, depressed fractures of the skull, etc.

XIII. **Disorders of Respiration.** *Cough* may arise from Centric Irritation. In some cases we have *Hurried Respiration*, and, when there is pressure on the brain, *Slowed Respiration*. *Cheyne-Stokes*, or Tidal, or Ascending and Descending breathing, is met with in Tubercular Meningitis. It is sometimes noticed where there is actual trouble in the Pneumo-Gastric roots, *e. g.*, where there is pressure from an exudation, or where there is a change in the nerve-centres accompanying blood-poison, *e. g.*, in Uræmia. The pause between the inspirations may last ten, fifteen or even thirty seconds, and the breathing be even shorter than the pause. The deadened state of the brain does not perceive the need of respiration, and there is an accumulation of Carbonic Acid. This accumulates until it finally arouses the lethargic brain, but this energy soon dies, and the brain lapses back until there is another rally. This breathing is a very ominous sign. After recovery is very rare.

XIV. **The Circulatory System is affected** where a tumor presses on the brain; the Pulse may be slowed. It is often irregular or intermittent. Where we find these changes without heart trouble, we should think of the possibility of brain lesions.

XV. **Derangement of the Digestive Apparatus.** Vomiting is often produced by centric irritation. Where we do not have enough Gastric trouble to account for its occurrence, we should think of brain tumor as a possibility. Where there is brain trouble we may have Constipation. On the other hand, we may have, as in Spinal Palsies, Incontinence of fæces, or the patient may be unable to void them, and then we have Retention.

XVI. **The Urinary Organs are Involved.** We find *Incontinence* with involuntary constant dribbling, or there may be *Retention.* A central lesion near the floor of the Fourth Ventricle may give rise to *Saccharine Diabetes.*

Causes which lead to Functional and Organic Diseases of Nerves:—

I. **Heredity.** With the exception of Phthisis, in no other diseases is there a greater hereditary tendency. The children of Epileptic parents will have either Palsy or some form of mental derangement. Pseudo-hypertrophic paralysis runs in families. Several cases have been noted in a group of relations, and not so many in a million outside these.

II. In no other class of disease does **Traumatism** have such effects. Epilepsy may often be traced to an old injury, which may be only revealed by trephining or at the *post-mortem.*

III. **Over-Exertion,** exhausting excessive labors.

IV. **Prolonged and Depressing Emotions,** *e. g.*, excessive indulgence in venery.

V. **Inordinate Use of Alcohol and Tobacco.**

VI. **Atmospheric Influences.** The Nervous System is liable to be influenced by violent vicissitudes of temperature, but still more by long exposure to cold.

VII. The brain is especially liable to **Syphilitic Disease,** but the chord and nerves are also affected. Lesions from Syphilis will always yield to large doses of Iodide of Potassium. This distinguishes them from other similar lesions. By proper treatment a Syphilitic Gumma will be dispersed. This is not so with other tumors.

VIII. **Atheroma of Arteries** is a fruitful source of Nerve Disease, leading to Softening of the vessels.

In the study of any Nervous Disease all the above causes must be looked for. In making our *Diagnosis* the first point is to distinguish Functional from Organic disease. We should study the History, Symptoms and the Mode of Development. Next we localize the disease. This is more important in nerve diseases than in any others, except perhaps those of the heart. We then study the special function that is disturbed, and, having localized it, we determine its Pathological nature.

Diseases of the Membranes :—

Meningitis may be Cerebral, Cerebro-spinal or simply Spinal. The membranes are liable to Inflammation, under the names of Pachy-meningitis, Arachnitis and Lepto-meningitis. These are the accepted divisions. The *First* is inflammation of the thick outer membrane of the brain or Dura. It is especially met with in Trauma and disease of the bone, as in Caries. The *Second*, or inflammation of the Arachnoid, is rare as a separate affection. The *Third* may present itself as Tubercular Meningitis, or it may be Idiopathic.

I. **Tubercular Lepto-Meningitis** is an inflammation of the Pia or Arachnoid space, accompanied with a deposit of tubercles. Its **Causes** are: 1. **Age.** It is a disease of infancy, being comparatively rare after puberty. It is most frequent in the first three years, but occasionally occurs in adult life. It is influenced—2. By **Heredity.** 3. By **Tuberculous Diathesis.** 4. By a **Tendency to Nervous Diseases.** Especially does it occur in infants whose mothers are delicate or have a tendency to Phthisis. Such children should never be suckled by their mothers. 5. It is brought on by **Dentition**; or 6. By a **blow on the head.** The essential lesions consist in the formation of grey, round, tuberculous granules in the meshes of the Pia Mater. These are found chiefly in the course of the small vessels connected with the sheaths. They seem to prefer the base of the brain, particularly the Fissure of Sylvius, and back of the Crura of the brain and the Pons. Their formation is associated with congestion, inflammation and the production of lymph. At times this is copious. The lesions may extend into the Spinal Tract and involve the Chord. The Substance of the brain is congested. The outer layers show degeneration, and the lining of the ventricles is often roughened or softened with the too great effusion therein. Tubercles are often found in the Lungs, Spleen and Lymphatic Glands. In adults Tubercular Meningitis is never Primary, but always follows tubercles somewhere else. In children, however, it may be primary.

The **Symptoms** are very characteristic indeed. We consider those of—1. *The Invasion.* 2. *The Fully-Developed Disease.* 3. *Coma.* There may be some *Prodromes.* The child is irritable, has a headache, and is listless. Unless the **Headache** is very constant, there is nothing definite. Children do not often have headache. When they complain of it day after day it is very alarming. It may be Local or General. It may wake the child from its sleep, with a **Cry** which is so peculiarly shrill that it has been designated the Meningeal or Hydro-Cephalic Cry. **Fever** ensues—at first slight; then the temperature may run up to 103° F. and 104° F. The **Pulse** is small and tense. The **Special Senses** are very acute. The child wants the room darkened. The noises of the street annoy him. There may be **Wandering Delirium** or simply **Insomnia.** This lasts three or four days, then the *Fully-Developed Stage* is reached. This is marked by **Flushing of the Face** and local **Sweating** about the head. At times there may be **Convulsions** or spasmodic twitching. There is a tendency to **Delirium** and to starting out of sleep with a cry. The **Headache** persists, the **Pulse** continues frequent, but may present little halting in its character. There is **Vomiting** without nausea, which is strictly Reflex in its character. **Constipation** is marked. The **Belly** is sunken and scaphoid. The Ilia and Ribs stand out. There is apparently no room for the intestines. It will now be noticed that if the finger is drawn over the brow or the skin of the face a red streak or **Cerebral Tache** will result. If the eye is examined there will be found **Optic Neuritis** and **Cerebral Tubercles.** The **Pulse** now becomes slow. It falls from 120 to

90, to 70, or even 60. This with fever in a child is very important. **Squint** may now develop. The child lapses into a state of **Coma**; the **Pulse** becomes irregular and often increases beyond the power of counting; **Breathing** becomes of the Cheyne-Stokes type. There are still local *Sweats* and *Cerebral taches*, *Flushed cheeks*, *Local spasms*, *Squint* or occasionally *General Convulsive Movements*. The child *wastes* rapidly, *Vomiting* stops, *Constipation* continues, *swallowing* becomes difficult and *Death* ensues from paralysis of nerve-centres and Inanition. The case may last twenty-eight days, but fourteen or fifteen is the average duration.

Diagnosis. There are few diseases with which this can be confounded. 1. It may be mistaken for *Typhoid Fever*. Typhoid is often anomalous in children, and is wanting in nose-bleed, diarrhœa and what we regard as its characteristic temperature. It is often not fully developed in children. If tubercles have attacked the membrane of the bowels, Meningitis is very liable to be mistaken for Typhoid, for then the belly is distended instead of being scaphoid, and there is diarrhœa instead of constipation. We can easily distinguish Meningitis from Typhoid by the *change in the Optic Nerve*. The course of the fever is more characteristic in Typhoid. There we have no squint, no local palsy, no tendency to local spasm, and the peculiar halting pulse does not appear. At the end of four days there should be no doubt as regards the diagnosis. 2. The question may come up to distinguish it from *Simple Meningitis*. Here we would be guided by the existence of a hereditary tendency and predisposition, the occurrence of a similar case in brothers and sisters as they reached the same period, the existence of tuberculous formation elsewhere, tenderness of the spleen and enlargement of the lymphatic glands, and by the results of Ophthalmoscopic examination of the Retina.

Prognosis. As long as you can cling to hope, do so. When you see advancing exudation and the approach of coma, you may inform the parents that the prognosis is utterly hopeless. All cases of recorded recovery have been where Idiopathic Lepto-Meningitis has simulated the Tubercular variety.

Treatment is purely palliative. The indications are to allay the fever by the use of a hot foot-bath and the application of ice to the head. We may give small doses of Aconite with Bromide of Potassium. This febrifuge and sedative treatment we pursue only to await results. The diet should be of the simplest kind; light liquid food should be given and the bowels gently moved by an Enema or simply by laxative food. No purgatives should be ordered; the chance of it being Typhoid fever should warn us against them. When the true nature of the disease is seen, continue the light diet as the child is willing to take nourishment. Keep up the Bromides to control spasm. Treat the case as though it might be Simple Meningitis. Give Iodide of Potassium from the first in positive doses, but still graduated to the age of the child. For a child of two years old give one-half grain every two hours, increased to one or two grains; this would be equivalent to ten grains in an adult, and would do as much good as any amount in a non-syphilitic case. With the Iodide we may combine Fluid Extract of Ergot, giving of the latter three, four or five drops to a child of two years, making in a day one-quarter to one drachm of the extract. *Blisters* are of doubtful utility; if the evidences of inflammation are high and there is great pain, we may apply one to the mastoid region of the scalp, but *not* to the nape of the neck, as has been recommended.

II. **Idiopathic Meningitis** occurs most commonly in children. The ordinary **Causes** are: 1. **Atmospheric Disturbances.** Sudden changes of temperature have been known to produce it. 2. It may occur as a

Secondary Complication in Pneumonia, Typhoid Fever, Erysipelas and Rheumatism. The **Symptoms** of Meningitis when arising in these diseases is puzzling, especially because we have marked brain symptoms from other causes, as, *e. g.*, from Pyrexia, and we may hesitate as to whether there is any actual organic affection of the brain or not. If, without intense Pyrexia, we have—1. Acuity of the special senses. 2. Headache. 3. Flushings of the head and face. 4. A disposition to muscular spasm, tremor or actual convulsions. 5. Squint or other local palsy. 6. Neuritis of the optic nerve. 7. The Pulse halting, rapid, then slow and irregular, we know we have a Meningitis.

Prognosis. It is very fatal, but not inevitably so, except in the tubercular form. We may have recovery with impairment of some member.

Treatment. Absolute rest in bed. The exclusion of all light. The application of cold to the head and of a blister or mustard plaster to the calves of the legs and soles of the feet. We must use sedatives, as Bromide of Potassium and sometimes Opiates to relieve pain. Ergot is useful combined with Iodide of Potassium in proper doses. If life is preserved, as the disease passes through the acute stage, we may omit Ergot, and put in Bichloride of Mercury to absorb the exuded lymph. A light unstimulating diet should be given throughout.

Chronic Cerebral Meningitis is most commonly met with as an *accompaniment of injury to the bone*, as the *result of Syphilis*, or as a *result of Tumor.* Its diagnosis is often obscure.

The **Symptoms** are *localized* **pain** referred to nearly the spot of inflammation. Evidences of *irritation of the surface of the brain* as shown by **Insomnia** or disturbed sleep. **Subjective sounds. Disordered vision.** Sometimes a little **giddiness of gait** and then evidences of irritation or of pressure on the nerve trunks going from the brain centres, so that we may have **creeping sensations** in the auditory or optic nerves or in the motor nerves of the eye-ball. There is a **loss of flesh** *and general* **ill health.**

Diagnosis. The greatest difficulty consists in distinguishing it from tumor of the brain; this can only be decided by the result of treatment. It may arise from rheumatism. If Syphilis is present elsewhere this may put us on the right track. If it came on with an injury it may have hurt the Dura and then spread to the interior membranes.

The **Prognosis** depends on the exact cause and duration. It is most favorable in Syphilis. It is hopeless in the case of Tumor or an affection of the bone.

Treatment. It may be cured by local counter irritation—the use of the Cautery applied as near as possible to the seat of pain every eight or ten days. If it is a syphilitic accompaniment Iodide of Potassium is indicated associated with a Mercurial Salt.

Cerebro-Spinal Meningitis is chiefly met with in constitutional conditions. Frequently spotted fever is characterized by inflammation of the spinal chord.

Spinal Meningitis is considered under the three divisions of: 1. Pachymeningitis. 2. Lepto-Meningitis; and 3. Arachno-Meningitis or Arachnitis. As in the brain, Spinal Pachymeningitis is associated with Fracture, Caries, Wounds and the like.

More interesting is **Spinal Lepto-Meningitis,** *i. e.*, inflammation of the Pia Mater of the chord, which sometimes spreads and becomes basic.

Causes. 1. Rheumatism. 2. Exposure to atmospheric changes. 3. It may follow shock or concussion.

The **Symptoms** are: 1. **Pain in the back**, aggravated by motion. 2. **Pain radiating from the spine** round the sides and down the arms and legs. These are very marked. 3. Muscular **Hyperæsthesia.** 4. Increased **Reflex Irritability.** 5. **Limited breathing.** 6. **Retention** of urine. 7. **Constipation.** 8. The **Pulse** is frequent and we have fever. If it creeps up and involves the base we have an implication of the brain and of the nerves coming from it, and hence we should have symptoms of Cerebro-Spinal Meningitis.

Diagnosis. We might confound Spinal Meningitis with—1. *Acute Rheumatism*, but there we have stiffness of the joints. In children, however, inflammation of the joints may be absent. In rheumatism we do not have Retention of the urine. There is not so much Pain nor so much Hyperæsthesia, but there is a copious acid sweat. The urine is intensely acid, and there is more Fever than in Spinal Meningitis. We should remember, however, that Rheumatism may be complicated with Spinal Meningitis. 2. With *Tetanus*. Tetanus however generally follows a Traumatic cause, and is associated with Tonic Spasm and Contraction of the Buccinators, causing Lock-Jaw, and gradually spreading lower down. Tetanus developes more gradually. There is not so much fever. The bladder is not so apt to be affected.

The **Course** of acute Spinal Meningitis is irregular. It usually lasts from ten to fourteen days.

The **Prognosis** is doubtful. If it is limited to the chord it is favorable. It is apt, however, to leave thickening of the chord. If it creeps up and developes Basic or Basilar Meningitis it may terminate fatally.

The **Treatment** should be on the same plan as that adopted in Idiopathic Cerebro-Spinal Meningitis. 1. Leeching and cupping along the chord where the girdle pains indicate intensity of inflammation. 2. Internally, give Quinia, Opium, Ergot, Belladonna and Iodide of Potassium. Quinia is useful in lessening the exudation by its influence on the crasis of the blood vessels. Full doses should be given. Opium is essential for subduing irritability of the system and promoting quiet sleep. Ergot is beneficial for its special action on the vessels of the chord, and for absorption of such exudation as may occur. Give three to ten grains of Quinia twice daily, and give Opium per rectum or hypodermically. Apply liniments over the track of the painful spinal nerves and along the spine. This affection is more common than is generally believed. Tumors of the spinal chord are rare.

The food for a patient suffering from Spinal Meningitis should be light and simple.

Hydrocephalus. The expression acute hydrocephalus was formerly employed to designate Tubercular Meningitis, because there is an effusion into the ventricles of the brain. The presence of effusion into the ventricles is, however, a purely accidental concomitant. There are two kinds of hydrocephalus: 1. External, or meningeal 2. Internal, or ventricular. In the one the effusion lies between the brain and the skull; in the other the brain is distended, its substance thinned out, and the ventricles filled with the effusion. The external form of the disease is rare, but is sometimes produced by a meningeal hemorrhage which sets up slight meningitis.

The brain does not develop properly. The condition may come from the transformation of a meningeal clot, or, because the effusion breaks through the Corpus Callosum. **The Internal** is the more common form of hydrocephalus. In the internal form the ventricles are greatly distended. The Serum comes from an inflammation of the lining membrane of the Ventricles or from pressure on the veins of Galen. As the effusion increases it spreads out the substance of the brain. The furrows in the brain disappear and the

convolutions are flattened. The bony case grows in proportion to the distension; the vault of the cranium is increased in size; the Fontanelles are increased in area; and the Sutures become very wide. New centres of ossification appear in the wide sutures. This development brings about a strange disproportion between the head and face. The orbit is very flat and is pushed from the horizontal to the oblique position. The cranium is very voluminous. Various parts of the brain may be imperfectly developed; some centres of the brain may be wanting, or, we may have occlusion of one of the veins.

Causes. Hydrocephalus is a disease of **infancy.** It may begin before or soon after birth. It may begin the second year of life or as late as the seventh year. Infancy, then, is a strong predisposing cause. The disease may come from an **injury to the mother** during gestation. But it may come from **inflammation** set up by a tumor. There are cases in which the disease is brought about by causes which we are not able to detect.

Symptoms. First, the **head** of the child is noticed to be **growing** to a **larger** size than is usual, while the child may apparently be in perfect health. Secondly, as the disease advances there may be **feverish spells** with heated head, **disturbed sleep,** sudden cries, and in forty-eight hours these symptoms subside and the child appears to be all right again. Often the **tongue** is coated. The head gets bigger by spells. The **axes of the eyes** are directed downward. The child **cannot walk** well, the head falls to one side, or the child sits or reclines constantly. The functions of the brain do not develop, and the child is often dull. The **special senses** are impaired, or the child may keep up with other children in its lessons at school; the head alone may indicate the trouble.

Prognosis. The duration of this disease is very variable. Some children are hurried off by convulsions, especially where tumor is present. Others may be carried off by Bronchitis from injury to the Pneumo-Gastric Centre. Nutrition may fail. Diarrhœa sets in and can't be checked. In some cases the children regain the power of walking, and the muscles develop. Cases are on record of patients living to be thirty, the head containing gallons of water, but this is rare.

Diagnosis. We should never express our suspicion of the existence of this condition until we are perfectly sure. It may be confounded with simply an abnormally large head. In Rickets a big head is one of the morbid conditions. The Rickety skull is square and chunky, showing persistent thickening. Changes in the wrists, ankles, etc., are indicative of Rickets. The peculiar feverish spells and the interference with the mental functions make the Diagnosis easy. The Rickety skull again is entirely different in appearance.

The **Treatment** of Hydrocephalus is very unsatisfactory. The Lesion is incurable, but we should resort to all the means within our power as though the Lesion were curable. Adhesive strips of plaster should be applied round the head so as to exert a uniform pressure. These should be loosened if brain symptoms come on. But even this is unavailable. Prolonged use of Mercurials, Iodine, and of the Iodides has proved futile. If the child's functions are good, and we think it is an inflammation of the membranes, we simply put him on the use of alteratives to absorb effusions. We can treat special symptoms as they arise. We combat feverish symptoms with Opium, Aconite and Quinine, Digitalis and simple Febrifuges. Wheeled crutches, such as are made in Newark, are very useful. To them is attached a jury mast, so as to keep the head erect, and treadles to work the wheels. By means of this a child may develop strength for a time. The idea may occur to let the fluid out. This is useless in the internal form. Where the water is between the brain and its membranes it is useful. A pint may be drawn off, and complete recovery take place. Where the accumulation is inside the Ventricles the conditions which give rise to it are such that mere operation would not remove them.

Affections of the Cerebrum :

Anæmia,
Congestion,
Thrombosis,
Embolism,
Softening,
Hemorrhage,
Apoplexy.

The connection between the above is not so close in theory as it is seen to be in practice.

Anæmia implies a diminution of blood in the cerebral mass. It may be due to obstruction in any part of the arteries or to enfeebled power of the heart. The chief cause of obstruction is Atheroma accompanied by a thickening of the walls and a diminution of the blood supply. We have either a depressed function of the whole brain or of only the part which is anæmic. The **Symptoms** are **Vertigo,** a tendency to **syncope** on sudden exertion, and **impairment of the Intellectual powers,** memory, perception, and the like, and of the **special senses.** When the anæmia is intense and prolonged, the nutrition of the brain suffers and softening may be induced, especially if the disease of the vessels is extreme. We may have Rupture and Apoplexy. Thus we have a pathological chain from Anæmia to Apoplexy.

Cerebral Congestion is that state in which there is an excess of blood in a part or in the whole of the brain. It is an undue fullness of the vessels of the brain. This may be *active* and then there is arterial blood from hypertrophy of the heart, but more commonly it is *passive* and is due to an undue accumulation of venous blood. We meet this frequently and in intense degrees. **Causes.** It is produced by anything which prevents the return of venous blood into the chest, *e. g.*, wearing tight collars. A state of Plethora with a feeble heart which allows the blood to accumulate in the Sinuses. Pressure of a tumor on a vein. Passive Congestion is a common occurrence. Sometimes it is Acute and sometimes Chronic or Persistent. The **acute** form occurs in those who have a predisposition. A man with plethora and a weak heart gorges himself with strong food and then undergoes exertion, Acute Congestion results. There is fullness and dull pain in the head, confusion of mind, or full unconsciousness with stertorous breathing. The face is flushed. The veins of the face are distended. The Pulse is full. The heart's action and the breathing is labored. The patient feels numbness and loss of power in the arms and legs, which may be hemiplegic or only affect one limb. If he has been unconscious, when he comes out he finds weakness of the part not amounting to actual palsy. There is very little use of Temperature. Attacks may last three or four days or three or four hours, and if there is no rupture of the blood-vessels the patient comes out and gets well because there is no lesion. It is impossible to draw the line between acute congestion and slight hemorrhage. **Chronic** Congestion is a continual fullness of the vessels of the head. The patient suffers from obtusive headaches, is restless, sleep is disturbed with dreams. He feels oppressed when he lies down and is better when he sleeps semi-recumbent. There is confusion of mind. Changes of temper are noticed. The patient is irritable, is easily tired. The secretions are disturbed. Congestion of the stomach

and Liver may exist too. A sudden increase of pressure may give rise to Apoplexy. Nutrition may be interfered with. Softening may result, and from it may spring Hemorrhage.

Thrombosis is coagulation of blood in a vein, artery or sinus. It is connected with changes in the walls of the vessels or Atheroma. **Cerebral Embolism** is the plugging of an artery in the brain by a clot driven from a distance. This may have come from the heart, or may have gathered on the rough lining of Atheroma. Its size, if large, will often stop it at the Circle of Willis. If small, it may get into the small vessels. If it stops at the Circle of Willis it will not cause Softening, because the anastomosis is so complete. If it is very small it will not cause Softening, because the other vessels supply the place of the vessel which is plugged.

Cerebral Softening is a very common and important condition. It is a loss of consistency of some portion of the cerebral substance, owing to interference with its circulation. Anæmia is a long step on the road to softening. Atheroma, or acute obstruction, may so hinder the passage of blood through the Common Carotid or the Innominate, that we have impaired circulation and malnutrition of the part. Long-continued Anæmia or Congestion, continued over-taxing of the brain, exhausting its vitality, impairing its nutrition and producing Anæmia, finally causes softening. We find it in the neighborhood of a tumor, or around local meningitis. Anatomically, the softened part is whiter than the surrounding matter. It varies from a cream-like liquid to a barely perceptible softening. If we examine it microscopically, we find the nerve fibres broken, and globules escape something like oil drops and compound granular cells. The extent of the softening varies from a very minute point to a whole hemisphere.

Symptoms of softening are very varied, according to the part affected and its extent. We notice a **failure of motor power,** though the patient may be very restless. His **gait** grows shambling. He trips. He does not lift his feet and put them down regularly. Sometimes we have staggering, and Vertigo. **Intellectual Changes** take place. Memory fails. There is often a **change of disposition.** He becomes restless, peevish, irritable and even quarrelsome. In later stages we find a complete perversion of the moral nature. There be total depravity. With this we have changes of other functions. The **appetite** is often capricious and voracious. The patient bolts his food. The **circulation** is weak. The **pulse** small. The **bowels** costive. The flesh may be well maintained, but grows soft and flabby. In this condition the patient is carried off by apoplexy. Acute congestive attacks make the patient feel worse, and then he may get better; but the disease has advanced. It may last three, five, or even ten years. The patient becomes childish, and is carried off by some accident or by hemorrhage. The **Prognosis** is altogether unfavorable. The disease advances slowly, and terminates fatally.

Apoplexy is a rupture of a vessel within the cranium, attended with hemorrhage into or upon the cerebral mass. It may be *Meningeal, i. e.,* when the apoplexy is on the membranes; or *Cerebral, i. e.,* in the brain substance. There may be one or more spots of hemorrhage. It varies in extent. Thus, we may have mere Ecchymosis, *i. e.,* Capillary hemorrhage, or the hemorrhage may burst into a ventricle and tear the surrounding brain substance to pieces.

Among the **Causes of Apoplexy** are:—1. **Plethora** and whatever contributes to the habitual fullness of the blood vessels of the brain, *e. g.,* increased propulsive power of the heart, as in simple hypertrophy, particularly if the vessels are weakened, as in the interstitial form of Bright's

Disease. In fact, it is very common in Bright's Disease. 2. **Whatever lessens the consistency of the brain,** *i. e.*, Whatever favors Softening. 3. **Atheromatous changes,** leading first to Softening and subsequently to Apoplexy. 4. **Age** exerts an important influence. It is most common in advanced age. Next in infancy and early childhood, when the vessels are brittle or weak. 5. **Sex.** It is more common in males than females. The former are more exposed to its causes. They have Syphilis and Bright's Disease of the Kidney more frequently. 6. Their **Occupations** expose them more to violent exercise. The proportion of cases among men and women is as three to one. 7. Certain **Habits,** as gluttony, drunkenness and sloth, predispose to Apoplexy. Persons with short necks used to be called apoplectic. Such people are generally quick-tempered and sensuous, but there is nothing in their anatomical structure to justify this opinion. Inherited Gouty Diathesis may predispose to high living, and this to Apoplexy.

The **Morbid Anatomy** is very interesting. When the hemorrhage is recent the blood is dark, the surrounding brain substance stained and more or less infiltrated. The hemorrhage may be in a sack, with brain substance quite healthy around it. If, however, Softening has occurred, the brain may be a good deal broken up. In time the clot undergoes contraction, and its coloring matter crystallizes in rhomboidal crystal of Hæmatin. Inflammation occurs in the intercellular substance around it, and makes a cyst wall. Years after we may find a little cavity containing pure serum and the most beautiful crystals. Sometimes we merely see a cicatrix and a few crystals to mark the spot.

Seats. Most frequently it occurs in the neighborhood of the Corpus Striatum through which the motor fibres pass. About one-half of all cases of Apoplexy occur here. The Pons Varolii, Peduncles of the Cerebrum and Cerebellum, the Cortex and the Ventricles are the most frequent seats. Attacks of Apoplexy may be divided into the three grades of **Slight, Marked** and **Fatal.** The Symptoms of **Slight** Apoplexy are simply those of congestion. It may be difficult at times to say whether there has been a loss of blood or not, it may be so slight. At other times we can say there has been a small escape. The attack may be attended with or without unconsciousness. The **Symptoms** are **fullness** of the head, distress and slight giddiness. The patient often **vomits.** There is a feeling of **numbness,** tingling and weakness in the arm and leg of one side, and more or less loss of power in that side. It may be very transient, passing away in a few hours, or there remains a partial weakness of that side. Under these circumstances it would be difficult to say if there had been a rupture. We may have weakness of the side and then a kind of hemiplegia according as the interruption offered to the motor current by the clot is longer or more persistent. When the brain is ill nourished and has undergone some softening, it is wonderful how the consciousness is unaffected, and the paralysis is only seen the next day. The hemorrhage is apt to be unassociated with unconsciousness and grave symptoms of the moment. But very often the first attack is a slight one of this kind, and the patient dreads the recurrence of similar attacks.

Marked Apoplexy comes on rather suddenly. There may be prodromes of Headache, but generally the patient falls without warning as if struck down. Unconsciousness may be partial or profound. The patient is seized with a **fit** as in epilepsy. Vomiting is not so common as in a simple attack. The **pulse** is full and heavy. The **breathing** labored, the **face** flushed. Sometimes, and particularly if the patient's brain has been anæmic, the face

is pale, and the pulse weak. Symptoms of turgescence are wanting. The **Temperature** is at first depressed but soon rises above the normal and may run very high. We notice symptoms of **Palsy.** There is often turning of the head and eyes toward the injured side of the brain. This phenomenon is known as "conjugate deviation," and is of assistance in diagnosis. The muscles of the Face are palsied. The **cheek flaps** in respiration, and, as the muscles of the other side retain their power, the face is drawn to the injured side. The Paralysis extends to one side of the body involving the arms and leg. This is noticed even when the patient is unconscious. This apoplectic condition lasts a varied time, from one-half an hour or an hour to several days. The arm if lifted falls as dead; whereas the arm on the unaffected side falls in the normal manner.

The third and **gravest variety** is where there is a drowning effusion which is very extensive. The onset is a **Convulsion.** The whole muscular system is profoundly relaxed. The **pupils** are dilated. The **breathing** stertorous, with puffing cheeks. The **pulse** grows rapidly small. The **lungs** fill up with serous effusion. The **heart** fails and death follows in a few hours or a few days.

SYMPTOMS REMAINING AFTER RECOVERY.

If we consider the state in which we find a person who has recovered from an attack in the first place as to Palsy, we give the name of Hemiplegia to the paralysis which follows cerebral hemorrhage. This is on the side of the body opposite to that of hemorrhage. The crossing of the fibres at the peduncle explains why the paralysis is on the opposite side. Some fibres, as those which furnish the Orbicularis and Frontalis, arise in such a way that a single hemorrhage does not affect them. Note the difference between this palsy and that of the Facial nerve. The patient has a hemiplegic gait, and drags his leg by means of the rotators of the thigh. He walks with his arm in a sling. The muscles of the arm often remain paralyzed longer than those of the leg. Certain changes take place in the condition of these muscles. We have an early rigidity due to an inflammation around the fibres. Sometimes this contraction does not come on at once, but it is only after some time that the muscles begin to contract. Early rigidity may pass away. Late rigidity remains. The muscles waste but do not undergo much degeneration. It is a simple atrophy. The electrical condition of the muscles may be increased, but this soon subsides and then their electrical irritability diminishes. The circulation also is often affected. The return of power is usually only partial. A patient *may* regain almost complete use of his limbs, but this is rare. The Mental Condition is very varied. We often have Memory, Will and Energy impaired. Not rarely do we have that depression of spirit and alteration in character which is associated with softening, and when softening does not precede the hemorrhage it may be brought on by the latter. There is always danger of a second attack, and the patient lives in constant dread of its occurrence. The **Special Senses** may or may not be impaired. The function of articulate speech is frequently lost, and we have as the result Aphasia. It has been found that the Centre which governs articulate speech lies perhaps on both sides of the brain, but the *active centre* is on the left. It is situated in the Island of Reil, which lies within the Fissure of Sylvius. Aphasia is an extremely important symptom. It is not connected with palsy of the tongue. The tongue is paralyzed on the same side as the arm and face. The tongue is stuck out towards the paralyzed side owing to loss of opposition. The paralysis soon passes away, but Aphasia may last for life. This is a "Loss of Words." The patient struggles to get the right word, and may burst into tears from inability to remember the right name of some familiar object. He may remember the word and write it down in a good hand, but is unable to co-ordinate memory and the muscles of articulate speech. Aphasia of course affects the patient's legal status. He cannot communicate his wishes, as, *e. g.*, by making a will. The **General Health** may be good. It is affected by the causes which brought about the first attack. A patient may have several attacks. The popular notion is that the third kills. Death usually occurs from progressive softening of the brain.

Diagnosis. 1. We may confound a slight attack with *Congestion.* We should be on our guard against a positive expression of our opinion, as we cannot always tell. Even when paralysis is very brief we must be guarded against an assertion that there has been no hemorrhage. Examine the condition of the teeth. The want of supporting teeth may give rise to the appearance of an apoplectic face. 2. Slight attacks should be distinguished from *Embolism.* This, too, causes a sudden attack. Unconsciousness is not usually complete. There may be a local source from which the attack has come if the patient has heart disease; but a patient with heart disease may also have apoplexy. Sometimes the examination of the Retina proves that a bit of fibrin has plugged one of its vessels, and this would be an index of the embolic nature of the case. 3. We should be very careful to distinguish Apoplexy from *Drunkenness.* Many a man has been taken to jail with Apoplexy. The odor of the breath and history of the circumstances are diagnostic. 4. In *Epilepsy* the convulsion is more frequently one-sided, but when the convulsion has ceased we may have paralysis of one side. In Epilepsy there is no paralysis.

Prognosis of Apoplexy is difficult. While unconsciousness lasts we should never venture an opinion. After the attack has passed over, we must consider the patient's liability to other attacks. This will be in proportion to the disease of the blood vessels and to softening of the brain. We next consider the prospect of the recovery of the use of the paralyzed limbs. In this we are aided by the promptness with which power is regained, by the absence of wasting, and decrease in rigidity, and by the changes in the nutrition of the part. The maintenance of electrical irritability is favorable. The **Treatment** of Apoplexy is divided into three parts—1. Prophylactic. 2. Treatment of Convulsion. 3. Treatment of Sequelæ. The first is the most important. If patients would listen to physicians, there would be less apoplexy. A strict course of regimen to reduce plethora, and bring about a uniform circulation, will avert the danger and ward off hemorrhage. Work must be restricted, and excitement and everything likely to disturb the temper must be avoided. The dress should be so arranged as not to restrict the vessels of the neck. The patient should eat slowly, and avoid the heat of the sun. In cases of constitutional syphilis, we should put our patients on their guard against apoplexy by informing them that, though all external manifestations may have ceased, insidious changes will for years go on in the blood vessels, hence Anti-syphilitic Treatment should be kept up for a month or two annually for twelve, fifteen, or even twenty years. **Treatment of Seizure** is governed by the nature of the attack. If the face is flushed, the pulse full, the eye congested and the vessels beating, whether you think there is Congestion or not, bleed the patient. What is to be feared is surrounding congestion of the brain The hemorrhage has not sufficiently relieved it, and the patient may be seized in a few days with another attack. Bleed once to a moderate degree, and don't repeat it. In mild apoplexy no one would think of opening a vein. We may put cold to the head, by means of a flow of very cold water through a rubber tube coiled round the head, or

by an ice-bag. The patient must be kept in a cool room, in bed with his shoulders raised, and warm applications to his feet. Give him nothing to swallow. If his pulse fails, give a hypodermic of brandy, with or without digitalis and ether, and enemata. The brain must have perfect rest and quiet for a considerable time. For months we must have complete brain rest. Change of scene and travelling are good. The patient should not, if practicable, return to his old haunts. **Subsequent treatment** depends on the causes which led to the attack and to their removal. Hygiene, so as to give the nervous system tranquility. Very cautious dieting. In treatment of paralysis, we favor the absorption of the clot by Iodide of Potassium and small doses of Mercury. When all evidences of irritation have subsided, we may cautiously increase the motor functions with Strychnia. We will use nutrients and tonics, as cod liver oil, hypophosphites and bitter tonics. We must manipulate the paralyzed part to prevent contraction, wasting and stiffness of the joints. Douches, either hot or cold, or alternately so, may be tried, and stimulating liniments. Electricity, in the form of the Faradic current, applied to the various groups of muscles to maintain their nutrition. This treatment must be pursued for a long time.

ORGANIC CONDITIONS OF THE SPINAL CORD.

I. **Meningitis.**
II. **Congestion.**
III. **Inflammation** or **Myelitis** $\left\{\begin{array}{l}\text{Acute.}\\ \text{Chronic.}\end{array}\right.$

Closely connected with this are—

1. Thrombosis,
2. Embolism,
3. Hemorrhage,
4. Softening,

which may all be considered under this general head.

IV. **Sclerosis.** 1. Lateral. 2. Posterior. 3. Disseminated.

V. **Affections of the Gray Matter and Cells**, often called Anterior Poliomyelitis, which includes: 1. Infantile Palsy. 2. Atrophic Spinal Paralysis of Adults.

VI. **Morbid Growths.**

The above are the morbid lesions that we think of in connection with the spinal cord.

Myelitis. Opinions differ as to its frequency. Some observers regard a great many organic affections as coming from the cord; others, degeneration, as Sclerosis, softening as an atrophy, and breaking down from want of nutrition. Inflammation plays a considerable part. If in a case we are apt to find associated the evidences of Myelitis and obliteration of the blood-vessels, some effusion of blood, and, as the result of interference with nutrition, softening, we find a little cord of yellow matter and evidences of hemorrhage, hæmatin crystals and the like; and around this softening, we may reason in either direction to embrace Softening, Thrombosis, Embolism or Inflammation. Some cases come on so gradually that they appear to be the result of softening. Others come on so suddenly that hemorrhage may have started them.

Myelitis and Softening. The Morbid Anatomy differs in its seat. It may be high or low, Cervical, Dorsal or Lumbar. Sometimes it is limited to not more than one-half an inch; sometimes six to eight inches will be involved. The cross-section of the cord is differently affected; it may affect the whole section or only one-half, or the outside, or only the central part. The symptoms vary in these different cases.

The **Causes** are: 1. **Traumatic.** 2. It may be excited by a **Thrombus** or a Clot. 3. It may be produced by the **action of cold** on a system exhausted by overwork, Venereal excess and the like. 4. Some **Acute Diseases**, as Typhoid Fever and Pneumonia, leave an exhausted state of the spinal cord, after which Myelitis occurs.

The **Symptoms** are: 1. **Pain** in the back, rather dull, radiating into the limbs or also into the arms, according to the level of the lesion. 2. **Numbness** and **Tingling** of the Extremities. 3. Moderate **Fever** and **acceleration** of the pulse. 4. **Palsy** below the level of the inflammation. Hence Cervical causes Paralysis of the whole body. Dorsal would give rise to Paraplegia. 5. The Bladder and Rectum are Palsied. Sometimes we have **Incontinence** and Dribbling, and sometimes **Retention** both of urine and feces. 6. There is a marked tendency to **Bed Sores,** which form with great rapidity, attended sometimes with sloughing of the whole derm over the Sacrum, which is usually symmetrical, but where the lesion is worse on one side, the Bed Sore is worse on that side. 7. **Girdle Sensation** is often complained of. 8. **Electro-Muscular Irritability** is retained. The muscles respond to the Electric or Galvanic current. 9. **Reflexes** are diminished, and may be lost in a short time. 10. A moderate amount of **Wasting** from mal-nutrition and disuse, but there is not such marked atrophy as when the anterior columns of the gray matter are affected.

These symptoms may develop quickly so that in a few days the whole condition with Bed Sores is developed. At other times they may come on so slowly as to suggest that it is rather a process of softening. It appears in an acute and subacute form, and is apt to become chronic. In a great many cases Chronic Paraplegia and affections of the rectum and bladder are associated with Chronic Myelitis.

The **Diagnosis** is, of course, easy. It is difficult to mistake it for anything else. We must not be misled by hysteria. There are cases of Paraplegia which are merely functional, as after diphtheria, but there has been no true myelitis set up.

The **Prognosis** is always anxious, and yet we must be careful not to make it too doubtful. An Acute case may completely recover. More often Sequels, for example, Palsy, may be left behind. More frequently it runs into a chronic form. We must be influenced by—1. The degree of Palsy. 2. The way in which the muscles retain their tone. 3. The condition of the rectum and bladder. 4. The presence or absence of bed-sores. Eight or ten days is the usual duration of the case.

Treatment involves—1. Absolute rest in bed. 2. The avoidance of the development of Bed Sores. From the first moment place the patient on a water-bed. Shift his position every little while. Insist upon scrupulous cleanliness. Every appearance of redness must be treated at once with covering, and soothing medicine. The use of the catheter is imperative. There is great danger of Cystitis, but infinitely more so when we use the catheter in medicine than in connection with surgical operations. Cystitis is so dangerous a complication that chemical cleanliness must be insisted upon. Care, too, is needed in reference to the bowels. Sometimes they must be moved by an enema. Anticipate dribbling by suitable measures and watch closely for the appearance of Bed-Sores. Internally, use Opium according to the needs of the case to secure rest and remove pain. Give Quinine gr. xii to xvi, with Potassium Iodide and Ergot in doses adapted to the age,

weight, and tolerance of the patient. In many cases it is a question of nutrition, and we must sometimes stop Iodide of Potassium and Ergot and depend on the nursing and feeding. A patient may thus recover more spinal power than at first seemed possible.

Hemorrhage of the Spinal Chord. The causes are sometimes **Traumatic,** *e. g.*, Violent Concussion, a fall from a height, or blow upon the spine. As Myelitis may arise from Hemorrhage, so Hemorrhage may result from Myelitis. We may have a slowly forming tumor, and around it there will suddenly take place a Hemorrhage. It may occur as a **Primary Trouble,** where the blood vessels are diseased, brittle and rotten. **Anatomical Changes.** If it is fresh, we find a clot imbedded in the substance of the chord, tearing it up. It contracts and becomes paler. Finally it tends to a little depression, and has a cicatricial appearance, and we have a patch stained with Hæmatin. All around this Softening is set up precisely as in hemorrhage of the brain.

Symptoms. Sudden onset with **pain,** and **paralysis** of motion, and sensation below the level of the hemorrhage. The **Bladder** and **Rectum** are involved. There is some tendency to **Cystitis** and **Bed Sores. Reflexes** are lost, and if the Hemorrhage has affected the grey columns, **Muscular Atrophy** may follow.

Diagnosis. It is difficult to distinguish it from Acute Myelitis, except by the **Traumatic** nature of the cause, its **abrupt appearance** and the **absence of Fever.**

The **Treatment** in the two diseases is similar. The same avoidance of bed sores, Opium to control pain, and the use of remedies to promote absorption of the clot kept up as long as may seem judicious.

Anterior Polio-Myelitis or Atrophic Infantile Paralysis. For a long time the true lesion was not recognized. The **Cause** of the affection appears to be—1. Some **Predisposition** on the part of the child. 2. The **Action of Damp.** A child sits on a cold step, is put to bed apparently well, and next day the disease develops.

The morbid lesion is **Inflammation of the Anterior Roots of the Gray Matter.** This leads to degeneration of the Nerve Cells. In a large section of the Spinal Chord we find in the anterior horns large multipolar nerve cells, and both Physiology and Morbid Anatomy agree in saying that on their integrity, nutrition of the muscles depends. When these waste, the muscles in connection with them waste too. If in the neck, the muscles of the arm; if Dorsal, those of the leg are affected. A single group of muscles, even an individual muscle, may be selected for wasting by the degeneration of these cells. In spite of everything the muscle goes on wasting till it is completely removed, so absolute is the connection and dependence of muscle nutrition on these Trophic cells in the Chord. This is what the name implies, and this is what clinical experience of Infantile Palsy describes. After this horn of gray matter has wasted we find the degeneration extending to the nerve roots, and then it is that the muscles waste. They not only waste but their fibres lose their Striation and undergo Granular Degeneration.

The **Symptoms** are very characteristic, whether in a child or in an adult. It may be considered a Disease of Childhood, but is not confined to any age. The attack is eminently an acute one. A few hours only serve for the development of the Symptoms. 1. There is very little, if any, **Pain.** 2. **Fever** to a moderate Degree, 102° F. to 103° F., which only lasts two or three Days. 3. The **Pulse** is somewhat accelerated. 4. The **Paralysis** may be complete and very extensive from the moment when the condition is detected. The child is playing, is put to bed, and next morning Paralysis of one arm or leg is observed. The child is not entirely paralyzed, perhaps, but can with difficulty move the leg. The Paralysis is not extensive and very irregular, not a strict hemiplegia or paraplegia. Only a group of muscles may be affected. The child may be able to use the thigh, but not the flexors of the foot. In the course of a very few days the Paralysis begins to get better. Some of the parts affected improve, and the paralysis is circumscribed very often to a single member of a group of muscles. 5. We next notice that those muscles which are affected undergo permanent wasting. **Atrophy** sets in. The part is **paler** and **cooler** than it should be. Its power of responding to the Faradic current is diminished. An **electrical reaction** of degeneration sets in. A scrap of muscle when taken out by means of a small harpoon, shows loss of striation, atrophy and degeneration. These progress with considerable rapidity. During this time the **general health** is not much disturbed. The parts most commonly affected are the Flexors of the foot, the whole arm, leg, and spinal muscles. The Bladder and Rectum very rarely. 6. There is **no tendency to Palsy of Sensation.** Bed Sores are apt to appear. In an adult, of course, the Wasting is marked, but not to the same degree as in a child where the other member keeps on growing. This difference is very marked. "Withered legs" are the remains of Infantile Atrophic Paralysis. Sometimes the other leg may attain to abnormal proportions from the child resting entirely on it. 7. When Infantile Paralysis affects a single muscle the opposing muscles act, and cause **Deformity.** The case then becomes one for Orthopœdic Surgery.

The **Diagnosis** is very easy. No other disease presents anything like this picture.

The **Prognosis** is altogether favorable as regards life. It may prove that *some* muscles may remain permanently palsied. As regards *complete* restoration of any group of muscles, or of a member, we should be guided by—1. The Slowness or Rapidity of the wasting. 2. By the absence or presence of Faradic Contractility; and 3. The fact of fatty degeneration having set in. To determine this we give an anæsthetic, and with a small harpoon take out a scrap of muscle. If it has undergone degeneration the case is hopeless.

Treatment. We must use Counter-irritation at once. Time is important. Apply Cups or Blisters to the spine. Enforce absolute Rest and the careful protection of the body from Draughts. Internally give Ergot and Belladonna at once in doses proportionate to age and tolerance. Keep the system under the influence of Quinine. The parts likely to be permanently paralyzed should be kept warm. We must have recourse to Frictions and Passive movements from a very early period, and as soon as Acute Symptoms arise, use Electricity, either with a Slow interruption or the Galvanic Interruption. If Faradic Response is lost, go on with the Galvanic Current, and when response to this stops, go in for General Stimulation by general patting, by rubber bands or by manipulation. The leg may be put under a cupping-glass to keep it warm. The health must be carefully sustained, and nutritious diet given. Even in very bad cases Response to the Faradic Current may be restored, and the deathly pallor and coldness of the affected part is restored to the pink color and warmth of health. Treatment should be kept up persistently until we know that fatty degeneration has really set in. Then the case is hopeless.

THE PERIPHERAL NERVES.

Sufficient importance has not been attached to the study of affections of the peripheral nerves. Not only are they themselves liable to be diseased,

but their impairment may affect the centres. Especially is this the case in the Optic and Auditory nerves. These peripheral nerves are the chords through which motor impulses are carried from, and sensory impulses to, the brain, as well as the vaso-motor impulses. They are composed of nerve fibrils, with connective nerve tissue surrounding them, and enclosed in a good stout sheath. They are liable to inflammation, called Neuritis when it affects the central parts, and Perineuritis when it affects the sheaths. These affections can only be diagnosed by their results, except in the case of the Optic nerve, where the Opthalmoscope comes to our assistance.

Causes may be **Traumatic** or the result of pressure, as in the displaced shoulder where the head of the bone presses upon the nerves in that region. A **Tumor** of the brain may cause a descending Neuritis. Very often **exposure to damp and cold weather** is a cause, especially in persons of a gouty or rheumatic diathesis. **Syphilis** is a common cause. The above are the most common causes.

The **Lesions** are very simple. We find a swelling of the sheath, congestion, some little œdema, and doubtless some proliferation of fibro-cellular tissue. If this last, it is followed by contraction and pressure of tissue on the nerve fibrils, and they become more or less strangled and atrophied.

The **Symptoms** are—1. **Pain.** The detection of the painful points is very important. They may be over the main trunk, or on some branch where it is superficial; *e. g.*, the superficial cutaneous nerve may be very tender in brachial pressure. We frequently find cases where, at different parts, there are points of nerves in a state of inflammation. 2. We have an **Affection of Sensation.** The part below has a feeling of numbness and tingling. If it be a nerve of **special sense**, that sense would be affected, as the eye or the ear. It is curious to note that, after a spell of pain, we may have a sudden **eruption** or herpes on the skin. These eruptions may be scattered or grouped, according to the direction of the nerve fibres; *e. g.*, in the intercostal spaces we may have Herpes Zoster. This is due to a lack of nutrition in the skin. We may have an **interference with the nutrition** of the skin owing to an affection of the veins. We may have **Twitchings of Muscles**, and at times tonic spasms. The muscles become weaker and more or less palsied. Their **electrical reaction** is impaired, and finally they may undergo **atrophy.** Thus, we see that all the influences which nerves exert are impaired by neuritis, or pressure on the nerve. Our mind should be impressed with the idea that it is an affection of frequent occurrence. Its existence has frequently been mistaken for rheumatism, or it has been referred to the spinal chord.

The **Prognosis**, if the affection is recognized sufficiently early, is favorable.

The **Treatment** is both **Local** and **General.** In the early stage it is well to leech over the affected nerve, so as to relieve local congestion. This may be followed by Iodine frequently repeated, and if the inflammation is of long standing, by a Cautery. The pain may be allayed by a Liniment of Chloroform and Aconite. The effect is due to the local action of the Aconite.

℞ Tinct. Aconit. Radicis,
Aquæ Ammoniæ Fortioris,
Tinct Opii. aa ℥ss,
Lin. Chloroform f ℥ijss,

or we may use—

℞ Hydrag. Protiodid. ℥i,
Veratriæ gr. xxx to ʒi,
Cosmoline q. s. ad. ℥i.

This latter never reddens or blisters the skin. It causes a sharp tingling. It must not by any accident be carried to the eye after scratching, as it induces a severe conjunctivitis. We may make use of a saturated solution of Iodoform in Collodion, according to the following Recipe:—

℞ Iodoform ʒi℈i,
Collodion q. s ad. f ℥i.

This, when painted on the spot, acts by contraction and the local action of the Iodoform. Sometimes it is necessary to give Opium Suppositories, or Morphia hypodermically. **Internally** we should be governed by the cause and constitution. If the patient has a gouty diathesis, Colchicum and the Alkalies. If rheumatic, Iodide of Potassium and small doses of mild Mercurials. If the pain is distinctly paroxysmal, give full antiperiodic doses of Quinine. Keep up the tone of the muscles by Friction, Manipulation (this point is exceedingly important) and the use of Electricity. The Galvanic current, with the negative pole over the painful spot, often acts as a sedative. When a nerve which is near a joint is the seat of inflammation, be careful to prevent anchylosis by gentle passive movement. One of the commonest forms of anchylosis arises from neuritis of the brachial plexus. A fall may drive the head of the humerus up to the chords of the brachial plexus. After a time the arm—which has been treated perhaps as a case of sprain—begins to lose flesh. The deltoid may be atrophied. The man is unable to raise his shoulder. The physician is equally unable to raise it. In this case we have a true anchylosis from inaction of the joint, and from the extension of the inflammation to the synovial membrane and thence to the sheath of the nerve.

Neuralgia is usually paroxysmal and unsymmetrical. It may be either unilateral or may affect different nerves. In true neuralgia there is no lesion. There should, properly speaking, be an altered state of function, but it is very often associated with a morbid condition of the nerve, *i. e.*, perineuritis or neuritis. It is difficult to say when it exists with lesions or when it is purely functional. The **Pain** often corresponds to the various foramina. It is very difficult to say whether we have a depressed state of nervous function or whether there is a thickening of the periosteum. It is difficult to say in some cases whether the nerves are not a tight fit, while in others the nerves, even when fully distended, do not fill the foramina. We must therefore look out for local causes; but there are cases where neuralgia has a purely systemic origin.

In the first place among the **Causes of Neuralgia** we have a neuralgic **diathesis** often inherited. It is very common in gouty, rheumatic and syphilitic subjects. In **gouty** subjects it may arise in two ways. There may be a local affection of the nerves or we may have an accumulation in the system of irritating and ill-assimilated stuff which causes an explosion, resulting in a gouty toe or a gouty neuralgia. In **syphilis** and **rheumatism** we frequently have an affection of the nerves. Again, we find that **Anæmia** and Mal-nutrition are also causes of neuralgia. Neuralgia has been defined as the cry of a nerve. It may be connected with **atmospheric changes,** which, owing to the morbid sensibility of the nervous system, affect the patient one hundred times more than they would normally. A study of the external relations of the patient muſt be made before we pronounce it anæmic. In many cases we shall find **climatic influences.** In a great many localities, as soon as a storm centre comes within a certain number of miles, it causes neuralgia. This storm range, as it is called, may extend to a radius of thirty miles. In whatever way **mal-nutrition** is brought about, whether by sexual excess, too frequent child-birth, etc., etc., neuralgia

very often succeeds it. **Malaria** is a frequent cause, also certain **Toxic agencies**, as lead or mercury. It is associated with **irritation of distant parts.** Ovarian and uterine disturbances frequently give rise to neuralgia in women. To the causes of neuralgia must be added the **overstrain of parts**; *e. g.*, of the Optic nerve, where we see the over-straining of the eye accompanied by impaired accommodation. This gives rise to frontal neuralgia.

The **Symptoms** of Neuralgia are those of the attack and of the interval. The condition in the interval varies, of course, infinitely. There are a great many who are anæmic and weak and morbidly sensitive. Particularly is this the case with women and over-worked men. Then there are the gouty and the plethoric, in which it is the result of undigested and accumulated matter. Such persons are well fed, but are the victims of frightful spells of neuralgia. An **attack** is frequently preceded by languor, possibly by chilliness and **depression of spirits.** Then pain comes on, which varies as to its seat and intensity according to the particular nerve affected. Sometimes it is so severe that patients would gladly bear anything to gain relief. The **pain** may be exquisite, lasting for a few hours, or so many days. There are often painful points, corresponding to trunks or branches. When the pain reaches its height, there may be **nausea**, vomiting, or merely disgust for food. There may be **spasms**, especially in neuralgia of the fifth pair of nerves, as in Tic Doleureux. When the pain stops, there is often a **copious discharge of light colored urine.** When a patient has suffered a long time from neuralgia, we may find **changes in the skin**, hair and muscles. A lock of white hair sometimes marks the track of the nerve, or the skin may appear glazed, and the muscle be atrophied. The pain differs in its seat according to the different nerves, giving rise to the terms Hemi-Cranial Neuralgia, where half the head is affected; Trifacial or Tic Doleureux, *i. e.*, of the fifth pair; Inter Costal, etc., Sciatica, etc., etc. The Viscera are often the seat of neuralgia, which simulates diseases of these organs. We have Cardiac Neuralgia, *i. e.*, angina pectoris; of the stomach, gastralgia. We also have renal and hepatic neuralgia. We also have neuralgia of the various portions of the intestines, upper, lower, middle, etc.; also vesico, uterine and ovarian. The seats of neuralgia are unlimited.

In the **Diagnosis** of Neuralgia, the particular Nerve affected must be discovered and traced. We may frequently discover the cause of the neuralgia by following up the nerve to its origin, where we may find pressure and local irritation. Spinal caries may cause pain in the side. We should eliminate such questions as *Syphilis* and *Rheumatism.* Find out the patient's constitutional peculiarities; whether he be the victim of *Lead Poisoning* or other *Toxic agencies.* Malaria or Intestinal Colic is to be diagnosed from *Lead poisoning* and *Passage of gall stones.* *Local Pleurisy* might simulate an intercostal palsy. Having studied the nerve and the cause of the neuralgia it is difficult to form a **Prognosis.** It is not a fatal disease, but it has an obstinate tendency to recur. It is hazardous to promise a complete cure.

Rational **Treatment** alone brings success, mere routine treatment is of no avail. When there is a strong neuralgic diathesis nothing but a skilfully prepared regimen so as to change the entire constitution is any good. There is no specific drug for neuralgia. Our first and most important duty is an appreciation of the constitution of the patient and an appropriate system of hygiene and regimen. In most cases this means building up the system by reducing work, removing strain, ordering rest, and securing some healthy diversion for the mind, Sometimes this necessitates a change of climate till the system is built up. We should recommend the use of Iron, Cod Liver

Oil, Malt, and Hypophosphites and such tonics as Quinine and Arsenic. Quinine as a remedy in neuralgia has been much abused; in some cases, as in those arising from malaria, it cures. Arsenic should not be used indiscriminately. It is also useful in malaria. In cases of neuralgia arising from a gouty diathesis our treatment would be exactly the opposite of that laid down above. We should require a restrictive and eliminating diet, cold baths, and rubbing with flesh brushes, and whatever tends to counteract a gouty predisposition. To relieve pain we must have recourse to certain anodynes. Apply cloths wrung out with hot solutions. Chloroform, Aconite, Iodoform, Collodion, Veratrum, Camphor, and Essential oils all afford relief. Menthol pencils are of service. The most effective way, however, is the hypodermic injection of Morphia combined with Atropia near the seat of pain. Every thing else should be tried first before resorting to this expedient, *e.g.*, Opium suppositories with Belladonna. Many opium and morphia eaters have been started on their downward course by neuralgia. Very little food should be taken during an attack. The digestion is disturbed. Light should be excluded from the room, and, if possible, sleep promoted, and very often the patient will awake from sleep free from pain. To induce sleep Chloral may be used, either in the form of the hydrate or croton chloral hydrate, in doses of gr. xv–xxv and gr. iii–v respectively. Where the stomach is irritable we may find it of advantage to give suppositories of Opium, Quinine and Asafœtida. We may give, in gelatin capsules:

Monobromide of Camphor,
Bromide of Quinine āā gr. xl,
M. ft. Pulv. Div. in Chart., xx,
Sig: one every one or two hours till the attack yields.

Opiates should only be resorted to as a last extremity. During the **Interval** the Treatment should be both General and Local. 1. *General Treatment.* The Cause must be discovered. Anæmia is to be expected and removed by careful diet, regimen and Tonics, absolute rest, change of Climate, Iron, Arsenic and Cod Liver Oil. In Plethoric cases cut down the diet and give more invigorating exercise. In these cases a Blue Pill once a week followed by a Saline Cathartic produces good effects. Every case requires separate consideration and Treatment. 2. *Local Treatment* is important where there is reason to think that a nerve is the seat of important morbid changes. Galvanism with one pole over the painful point and the other over the origin of the nerve. Faradization with the dry metallic brush. Repeated Blisterings over the affected part. The use of the cautery along the Sciatic Nerve. Nerve Stretching should be tried before Excision. The nerve is dissected out and stretched with the handle of a Scalpel. The Function is soon restored. A portion of the Trifacial nerve has been successfully dissected out, the bones sawed away and the ends of the nerve cut, and they have united. Acupuncture is in use in China, and is highly recommended.

Epilepsy has been called a Functional disease because there is no constant organic lesion associated. It is a chronic affection of the nervous system, characterized by sudden spells of unconsciousness, occurring at irregular intervals with or without convulsive movements.

Causes and Pathology. There is no doubt an element of **morbid irritability** of some **reflex** center, or a partial loss of the inhibitory action of the nervous system. If disposed to it, **Impaired Nutrition** may cause Epilepsy in some persons, while in others the same thing might produce simply Biliousness. Increased irritability and **impaired inhibitory power** make patients liable to shock which may be external or internal. In this disease the gray matter and cells are injured in some part of the motor track,

Epilepsy is divided into True Epilepsy + Petit Mal.
Epilepsy is a chronic disease, one or six convulsions not constituting it, but it is an established habit of more or less frequency in which convulsions are the chief symptoms.
A few convulsions is called Eclampsy - which generally is accidental
By a convulsion we mean an abrupt loss of consciousness usually accompanied by a momentary tonic contraction of some or all the muscles and always with a series of irregular spasms. It is caused by sudden Anaemia of the brain, which is caused by a momentary contraction of the blood-vessels going to the brain
abrupt loss of consciousness with slight spasm is all that is necessary to produce a convulsion.
<u>Symptoms</u> Occurs in both sexes at all ages but most frequently in early life. It is markedly hereditary
The first development of epilepsy seems to be due to some exciting cause, even the first ½ dozen attacks may seem to have causes, but at last they occur without any cause
The attacks occur with seeming regularity.
The sufferer usually has a warning called the Aura - as - a sense of coolness, a sharp pain, a ringing sound in the ears, an intellectual sensation &c
When the warning occurs at the periphery it travels upwards and by the time it gets to the centre the attack comes on.
Petit Mal differs from True Epilepsy only in the shortness of the attack and there being only a trace of muscular spasm
Some patients never get more than this form of epilepsy
Petit Mal is not more amendable to treatment than True Epilepsy.

especially in the top of the cord. There may be some **gross lesion**, as a spicula or fracture pressing on a nerve, a thickening, tumor, etc. These are called *Epileptiform*. We limit Epilepsy to cases where there are no lesions. Epilepsy is a chronic disease lasting for many years; perhaps thirty or forty years. Sometimes it can be stopped, or it stops itself. It is characterized by sudden **spells of unconsciousness.** There may be twenty attacks a day, or they may occur after an interval of years. Sometimes spells are very regular; but this seeming regularity does not endure. If they are very brief, and unattended with convulsions, it is called *Petit Mal.* We may have an **Aura.** It may be painful. At other times it is only a subjective taste, sound, or flash of light, which warns the patient.

Symptoms of the Spell: The patient turns white, instantly **loses consciousness,** falls, and before he reaches the ground there is alternate contraction and relaxation of muscles, something like a **convulsion.** This may affect only a few muscles, or it may affect a whole apparatus, as the muscles of the chest, tongue, etc. The patient is thrown about on the ground, and the convulsion lasts from a few seconds to many minutes. The face becomes purple by **venous engorgement,** the eyes are prominent, the veins distended, and the mouth full of **bloody foam.** After the convulsion ceases there comes a stage of **stupor,** with coma, deep sleep, heavy breathing, slow pulse, and remaining venous stasis. This lasts for some minutes or many hours. The patient then usually returns to consciousness and is seemingly well. In coming to, there is often developed a **stage of excitement.** The patient is uncontrollable, violent, homicidal, or in some other way insane. Post-epileptic mania is a frequent development. The patient may be prone to steal, murder or arson. Many persons have been hung for crimes committed under such condition. The **general health** may be preserved, but after a time there is loss of ambition and sustained energy. The effect on the **mental faculties** is worse; but there are exceptions. Napoleon, Cæsar and Mirabeau suffered at intervals from this condition. Eventually the **memory** fails, while the mental calibre deteriorates. The **character** deteriorates, the patient becomes difficult to manage, is quarrelsome, and develops vicious traits unknown before. Even where we have Petit Mal we may have great nervous changes. An epileptic is disposed to many criminal and unnatural acts. The patient generally ends with development of feeble nervous tone, and passes into a state of **slow softening of the brain.** Epileptics often injure themselves by falling or by drowning.

Prognosis is very serious, even when there is no organic disease of the nervous centres. Some cases stop, others may be stopped. The prognosis is grave and should be guarded. The prognosis of the lesser form of epilepsy is no better than the more serious. The rarer the attack and the more distinct the exciting cause the better the Prognosis, for then the attacks may be avoided. If there be evidence of organic disease, *i. e.*, Epileptiform, the prognosis would be more grave.

Diagnosis. It is very important to recognize it at the outset. Early treatment is vital. One attack predisposes to another. Professors Parker and Dercum found that resting their hand on one object and keeping their attention on another brought on epilepsy without unconsciousness. Nocturnal attacks often escape attention. The patient may have the tongue cut by the teeth, due to unnoticed attacks at night. These spells are often overlooked and called "weak spells" and "fainting spells." It is easy, however, to distinguish such spells from those of true *Syncope.* The convulsion itself is easily distinguished by the recurrence of it at regular intervals.

They may be distinguished from *Convulsions of Uræmia*, in which albuminuria would be found. Look for causes in old fractures, tumors, etc. Be careful to distinguish them from *Hysterical* convulsions, particularly from the Mongrel *Hystero-epilepsy*, in which we have hysteria and convulsions; but these present themselves after injuries to the spine or pressure on tender ovaries. Here the movements are rhythmical, the body arched, the tongue is not bitten, and the patient is not profoundly unconscious. There is also memory of the attack and recollection of what is said in the hearing of these patients. The **Treatment** is excessively important. We must search for the cause and appreciate the constitutional state. Exclude all local irritation, adherent prepuce, worms, morbid dentition and injured spine. Exclude Meningitis and Tumors. Having excluded these, we must go further, and study the constitutional condition. We must realize what the change is that brings on the attack. Is it external, or is it brought on by some change in the patient's condition? There may be regular symptoms which precede each attack, and we may ward off each attack by the administration of Blue pill, Saline laxatives, Emetics, etc. Having done this, study the means of aborting the "spell." If there is an "aura" let the patient take an inhalation of Nitrite of Amyl, and if it is so seated that we can intercept it this should be done. If the Aura start from the thumb, let the patient wear a rope around the arm, and by suddenly twitching the cord the Aura may be intercepted. Keep Nitrite of Amyl in a little bottle loosely corked, and a succession of whiffs may break up the spell. Prince Rupert's Capsules are too hard to break. A bottle is best.

Treatment of the Chronic Form. Put the patient on diet. Study the digestion, secretions, etc., and adapt the diet to the patient's system. Sometimes an exclusive milk diet acts wonderfully. As a rule not much meat or rich food should be given. But in boys and girls we often find impaired nutrition, and in these cases we must resort to good feeding and confinement to bed. We must enforce rest. The diet must be in connection with exercise and enforced rest. The most important thing is the regulation of the intellectual life—study, occupation, amusement, etc. Use the various bromides, as Potassium, Sodium, and Ammonium, as these are most important in the Interval, and exert a wonderful influence; but their action is very irregular. If a patient puts into his system xxx. to lx. grains every day for years, it sometimes is perfectly successful. But sometimes, though the bromides do stop the attacks, they may bring out troublesome eruptions, crops of boils, or even ulcers. Give Arsenic with the Bromides, or they may cause bromism. There is often a state of bodily and mental weakness. This may be warded off by Strychnia. We sometimes have to change the bromides. The patient may be worse off when in a condition of Bromism than in the epileptic fit. Sometimes the bromides will not act at all; they are not specifics. When one bromide will not act, try another, or two together. Vary the dose according to the age and effect. Combine some tonic where the digestion is impressed and the patient is weak and anæmic. The following prescription has been found useful:

℞ Potassii Bromid.,
Sodii Bromid. āā ʒiij,
Spt. Ammon. Aromat. fʒvi,
Inf. Gentian Co. fʒiv,
Tinct. Gentian Co. q. s. ad. f℥vi,
M. ft. S. fʒij, t. d. in water.

This is a tonic and antacid. We may give Chloral by enema, grains x to xx. It must be retained. Valerian, Hyoscyamus, Cannabis Indica and Belladonna do good in some cases, but are inferior to the Bromides. The Salts

of Silver and Zinc, *e. g.*, Oxide of Silver and Valerianate of Zinc, are useful where there is Gastric Derangement. Nitrate of Silver acts locally, but is absorbed, since it discolors the skin. All other known remedies have been used, but without effect. Root of White Peony has been recommended. Trephining may have to be resorted to, and Circumcision. In very rare cases Castration and Amputation of the Clitoris. Local Counter-Irritations to the base of the Brain and Spine are good.

Chorea or St. Vitus Dance is a Functional Disease of the Nervous System characterized by involuntary irregular chronic movements, occurring chiefly in the Voluntary Muscles, but also in all parts of the body. It appears in two forms. The ordinary Sub-Acute and the Grave-Acute. The seat is about the Corpus Striatum and its associated motor centres. It is not in the chord. The motor centres of the Cortex are often implicated. These parts may be in a state of weakness and undue irritability, or there may be a condition of enlargement and congestion, or the little vessels may be plugged with Emboli or Thrombi. Hence we have an interference with nutrition.

Causes are *Predisposing*, *e. g.*, **Childhood.** The vast majority of cases occur between the ages of seven and seventeen. **Female Sex.** Many more girls than boys are affected. All **Bad Hygiene** disposes to it. **Heredity.** The children of weak and neurotic parents are more liable to it. *Exciting.* Severe **Shock** may bring it on. **Rheumatism** develops it by—1. Weakening the system. 2. By inducing Endocarditis. 3. Little particles are detached from the valves of the heart, and these serve as Emboli. In many cases we have mitral murmurs. **Irritation** keeps up Chorea, *e. g.*, *Worms*, either Seat or Lumbricoid. A *splinter* under the nail. In adults chorea may start during **Pregnancy. Imitation** will start a whole school. We have had Epidemics of this disease among adults in Convents.

Symptoms at first may be one sided. This form is known as Hemi-Chorea (like Hemiplegia) but usually *both* sides are involved. There may be **Contortion** of the muscles of the hand or face, and jerking of the limbs till there is almost constant uncontrollable and extreme grimacing and jerking of the whole muscular apparatus. The **Gait** is awkward and shuffling. The child drops solid articles, spills liquids, sticks itself with its fork, and has to be fed. We call such movements Choreic. *It is not a Tremor* but a **violent jactation.** The movements occur when the child is trying to use a limb. They are increased by excitement. On the other hand, they nearly always cease during sleep. Nearly all the muscles, but more particularly the voluntary, are affected; yet the Bladder, Rectum, Muscles of Respiration, and even the Heart may be affected. Sometimes **speech**, which is nearly always affected, becomes very much so. The child can hardly enunciate his words at all. The **Mind**, for the time, seems impaired, and there may be downright mental debility. **Muscular Debility** may degenerate into palsy of one-half of the body. The **Sensibility** of the skin is impaired. This is particularly seen where the child dashes itself on the ground and doesn't seem to mind it. The **Reflexes** are blunted.

Duration. It develops gradually, runs an uncertain course, three or four weeks to as many months, and gradually diminishes.

The Acute or Grave Form comes on suddenly in adults. The movements are frightful. Eating is impossible. The patient cannot lie in bed. The Room has to be padded sometimes. Very often **Delirium** is associated, and there is some **Elevation of Temperature. Rapid Emaciation** takes place, so that this form of Chorea may terminate in seven to twelve days. In this disease the Cortical Centres are seriously affected.

Diagnosis is very easy. The movements cannot be mistaken. In *Disseminated Sclerosis* we have something similar.

Prognosis is, in the Ordinary form, very favorable. Chorea is not dangerous to life, but is doubtful as regards time. In children it is very apt to return in the following spring, owing, probably, to too hard work in school, poor feeding, etc. The Prognosis of Acute Chorea is very unfavorable. It is apt to become chronic.

Treatment of *Ordinary Chorea.* We must attend to the general habits of the child. It must be removed from school and sent to the country. Adherent prepuce, if existing, must be removed, also Gastric Irritation and Seat Worms must be treated. Iron is a remedy of almost universal application. With this we may associate Arsenic. To do good this must be pushed to its utmost. Fowler's Solution given immediately after eating and well diluted, gtt i to ii at first and then increased till symptoms of Arsenic poisoning appear. Sometimes it may be given hypodermically. Cimicifuga in the form of the fluid Extract or the Decoction is worth a trial. Arsenic may be given with it. Iodide and Bromide of Potassium are particularly valuable in cases of Rheumatism. Strychnia is deserving of attention, and where there is impaired nerve-action, pushed in ascending doses, it is very useful. Begin with very small doses, and look out for its physiological action, such as Tonic Contraction of Muscles. Ether Spray along the Spine, and Anodyne liniments. Careful Muscular Exercise and Calisthenics. Salt Water bathing. Friction and General Hygiene.

Treatment of *Grave Chorea:* All we can attempt here is to secure sleep, and administer nourishment. 1. Give Chloral Bromides, Opium, Anodynes. 2. The introduction of Food in the best possible manner must be secured.

II. DISEASES OF THE KIDNEY.

The **Urine** should be examined in all cases, whether Acute or Chronic. We study:—1. The Quantity; 2. Color; 3. Specific Gravity; 4. Reaction; and 5. The Presence of Abnormalities.

I. Quantity. The normal amount per diem varies from one quart to three pints. It may be—1. *Diminished* (a) by Diarrhœa, as in Cholera, Yellow Fever, etc.; (b) by Sweating; (c) in Nephritis; (d) in Hysteria. 2. *Concentrated,* as in Fever. 3. *Suppressed, e. g.,* in Hysteria. 4. *Increased,* 1. Where the Skin is inactive. 2. Where a large amount of Liquid has been taken into the System—especially is this the case where there is no Sweating, or the patient constipated. 3. After a Hysterical Crisis. 4. During Convalescence from Acute fevers. 5. When Liquid Effusions, as Dropsy, or an Ovarian Cyst, are suddenly removed. 6. In the Disease called Polyuria, where for a long time large amounts of a light color and low Sp. Gr. are discharged, with no increase relatively in its Solid Constituents.

II. The **Color** is closely connected with its concentration. It is *Dark*—1. When of Small Amount. 2. In Congestion of the Liver. 3. When there has been much disintegration of the red blood corpuscles, as in Malaria. It is *bile-stained* in Jaundice. In Haemoglobinuria it is *claret-colored.* This occurs in certain conditions, *e. g.,* in rupture and consequent absorption of the clot in extra-uterine Fœtation.

III. **Specific Gravity** is of importance only when taken in connection with the amount. Thus the Sp. Gr. in fever may be 1040. In anæmic persons it is low, from a lack of solids taken. In Diabetes it may be as high as 1070.

1018 to 1022

Kidney Diseases (From [illegible])

Acute Congestion of Kidneys

Causes (I) Irritants which give rise to the following symptoms

(1) Inflammation (2) Urine albuminous, bloody & [illegible]

(3) Kidneys enlarged [illegible]

Treatment – (1) Remove cause, rest & give diluent and mucilaginous drinks

(II) Vaso-Motor Paralysis

Symptoms – Urine not albuminous, abundant & of low sp. gr.

Passive Congestion of Kidneys – Found in the general venous congestion which attends certain pulmonary & cardiac diseases as emphysema, fibrous phthisis, valvular lesions, fatty degeneration of heart, myocarditis &c. Frequent cause – mitral lesions

Symptoms (1) oedema of lower extremities,

(2) Quantity of urine diminished, high sp. gr., more acid, color darker, with moderate amt. of albumin & usually some red blood corps., a few hyaline casts and a few epithelial cells

(3) upon standing urine throws down an abundant sediment of urates

Treatment – Remove cause & strengthen heart [illegible]

Acute Bright's Disease – Acute Diffuse Nephritis

Symptoms (1) Oedematous swelling, see first in face, on the eyelids &c

(2) More or less fever, often preceded by chills

(3) Thirst and anorexia,

(4) Pain & tenderness in loins

(5) Vomiting is a frequent symptom

(6) Skin dry & countenance pallid

(7) Dropsy increases & becomes general

(8) Dropsical effusion into peritoneum & pleural cavities

(9) Urine (1) Quantity diminished (may be nearly scanty)

(2) High sp. gr. Quantity of urea diminished

(3) abundant albumin, about 1/4 to 1 1/4 by weight

(4) In some cases urine is reddish brown due to blood

(5) Considerable sediment forms in urine which [illegible]

(1) red & white blood corps –

(2) epithelium & granular matter,

(3) Casts – blood – epithelial – hyaline –

(10) Coma & convulsions – due to uraemia

Symptoms of Uraemia,

(1) vomiting & purging (2) headache & [illegible]

(3) Impaired vision (4) Sudden complete blindness

(5) Coma & convulsions (These symptoms are their order [illegible]

Complications (1) Bronchitis

(2) Pulmonary oedema — pericarditis

(3) Inflammation of serous membranes, pleura, pleurit

Disease lasts from a few days to 2 mos. - Average duration about

Causes (1) may occur at any age, more frequent in males than in females

(2) Due often to scarlatina, diphtheria, typhoid fever &c

(3) Alcohol, articular rheumatism, carbuncles &c

(4) Exposure to damp and cold

(5) Other acute diseases, poisonous drugs &c

Treatment - embraces (1) Diminution of the intensity of inflammation (2) Removal of Dropsy, (3) Elimination of urea thro skin and gastro intestinal system -

I Diminish inflammation by

(1) warmth & rest - by keeping patient in bed

(2) Non-stimulating diet: water & bland liquids

(3) revulsion or counter irritation over loins by means of dry cups

(4) Fomentations over kidneys by means of moistened cloths covered with oiled muslin or several layers of flannel

(5) Saline laxatives to deplete

II To Remove Dropsy

(1) Saline cathartics, hydragogues or elaterium which is reliable

(2) Withdraw fluid by aspiration

(3) As a rule don't use diuretics as they increase inflammation

(4) Hot air bath

(5) Pilocarpine hypodermically

(6) Water drink freely.

(7) Arrest uraemic convulsions by means of chloroform inhalation or chloral by mouth or rectum or morphia hypodermically

Chronic Bright's Disease - Chronic Diffuse Nephritis

Three forms

I The simple Large White (red, mottled or white) kidney

II The small granular kidney

III The Waxy kidney

Clinical History

(1) It may follow acute - but usually it is subacute from start

(2) 1st symptom is usually dropsy in the form of oedema of eyes or lower extremities

(3) Anaemia

(4) Urine - Examination of

I Large White kidney without waxy degeneration

(1) Quantity diminished unless there be [illegible] by heart hypertrophy, when the quantity may be normal or increased

(2) Sp. gr. high when quantity is scanty, low when hypertrophy

(3) Color yellow & turbid

(4) Amount of albumen considerable (may be very large)
(5) Abundant sediment, containing casts, epithelial cells, red and white blood corpuscles & granular matter.
(6) All kinds of casts are found but the most common are hyaline —

[illegible] Large White Kidney with Waxy degeneration.
(1) Quantity abundant (2) Sp. gr. low - 1005 or less. —
(3) no red blood corps. (4) Color clear & very pale
(5) much albumen (6) little or no sediment, casts few, hyaline or waxy

[illegible] Small Granular Kidney (Renal Cirrhosis)
(1) they sometimes secrete urine which in no way differs from the normal
(2) albumen & casts may be absent
(3) Quantity excreted above normal & may be great.
(4) Sp. gr. low 1010 or less —
(5) Color pale greenish yellow
(6) urine clear with little or no sediment
(7) albumen usually present in small amt, casts few in no., usually hyaline.
[illegible] Indigestion & "dyspeptic" disorders are common
[illegible] Flatulence is frequent —
(7) Vomiting - uraemic vomiting occurs when the stomach is empty, usually early in the morning & the vomited matter often has an ammoniacal odor,
(8) Diarrhoea
(9) Perspiration emits an odor of urine & this may cause intense itching of skin
(10) Dyspnoea (11) Epistaxis
(12) Symptoms referable to the nervous system as - Delirium — cephalalgia is frequent. - Pain in back same. Neuralgic pains common. Vertigo common. Insomnia & disturbed sleep - Troubles relating to vision & hearing. - hemiplegia, paraplegia, paralysis, coma & convulsions (not so dangerous as in the acute form.

Complications - (1) oedema of lungs - (2) oedema of glottis (3) Amaurosis
(4) Pericarditis - (5) Peritonitis - (6) Pleuritis -
(7) Cerebral meningitis (8) hypertrophy of heart (left ventricle)

Treatment (1) hydragogue cathartics for the dropsy as elaterium 1/16 to 1/4 grain given until it begins to act then stopped
(2) Diuretics may be used
(3) Hot air bath & other sudorifics as jaborandi or pilocarpine
(4) Superficial punctures in the skin
(5) Treat the anaemia & improve appetite & digestion
(6) Pay particular attention to skin

Hydro-nephrosis - is dilatation of the pelvis & calices of the kidney by an accumulation of urine, in consequence of some obstruction in the urinary passages.

Causes are congenital and acquired

Treatment - (1) Remove the cause of obstruction, this can sometimes be done by rubbing and kneading over the sac or along the course of the ureters.
(2) The liquid may be removed by aspiration.
[illegible] Continuous [illegible] be [illegible]

Anuria - Suppression of Urine
Diuresis - excessive secretion of urine
Diabetes - Sugar in urine

I Anuria -
Causes - obstruction - Hysteria
Prognosis grave
Treatment - No diuretics but free [illegible] with hot fomentations or hypodermic injections of pilocarpine - No opium - but bromides & chlor

II Diuresis -
Causes - Convalescence from acute fevers - hysteria, [illegible]
(excess secretion of fluids in body)
Treatment - Severe forms use ergot, bromides, or iron &c.
Diuresis is a symptom in
I organic brain disease
II " kidney "
III Chronic [illegible] "
IV Cirrhosis of kidney
V Contracted Granular Kidney

III Diabetes
Causes - I Mental strain II functional derangement & organic lesion of the nervous system III Sex (more frequent in males) IV Race (frequent in Jews) V Excessive action of the liver
Symptoms:
I Frequent Urination or Polyuria
II Sp. gr. high & has sugar.
III Dyspepsia
IV Pruritus of Genitals
V Increased appetite (much thirst
VI Tongue dry & red
VII Loss of Strength &c
Treatment:
I Cut off starch & sugar.
II Avoid fatigue & irritation
III Give alkaline mineral waters
IV [illegible] Opium & Codeia, Iron & cod liver oil, bromides & ergot,
V Watch reaction of urine.

IV [illegible] - 3 in no -
Phosphatic. Uric Acid. Oxalic Acid - [illegible]

V Renal Calculi
occurs } In substance of kidney. Symptoms - Pain in back - no change in urine
" Pelvis — renal colic - pain at end of penis - frequent micturition &
" Calix
Diagnosis: I From passage of gall stone - location of pain [illegible]
II " Intestinal Colic
III " Lead colic
IV " Nephralgia or neuralgia of kidney.
Treatment - During an attack - hypodermic morphine &c.
Keep patient warm & quiet. Give [illegible]

IV. In this connection we consider the Symptoms of three important conditions, viz.: *Anuria*, or Suppression of Urine; *Diuresis*, or excessive Secretion of Urine; and *Diabetes*.

I. The **Symptoms** of Anuria differ according to the cause. 1. Where it proceeds from **obstruction,** what **urine** does escape is normal. The other Symptoms depend on the obstructing cause. If a Tumor, it would be found on Palpation. For several days the patient gets on pretty well; then comes distress, restlessness, pain, and then we have the **evidences of absorption** and the slow development of **Uræmia.** There is loss of appetite and nausea, dullness deepening into Coma, and the patient dies. The **duration** may be from one or two to ten or twelve days. 2. When there is **Complete Suppression** from other causes the few drops we do obtain, if it comes from acute Congestion, are highly concentrated, containing Epithelium and Tube Casts. On the introduction of the Catheter we may only obtain a few teaspoonfuls. There is fever, distress, loss of appetite; not rarely severe Nervous Symptoms and Convulsions. Vomiting is not rare, and is partly dependent on the retention of irritating matters in the blood. The patient may pass into a Typhoid state. 3. Lastly, where there is **Hysterical Suppression** the Pulse is tranquil, the tongue clean, and the expression natural. Sometimes we have Hysterical Vomiting, which is sometimes so profuse, and tainted with a urinous odor, that we think there must have been a discharge of some excrementitious material. There may be an absence of Nervous Symptoms. Then the flow may be re-established. What little there is may be normal. When there is no Cause of obstruction, and where the symptoms indicate a hysterical element, we should be on our guard against imposition.

Diagnosis. The first point is to establish the reality of Anuria, next the nature, and thirdly the attendant symptoms.

Prognosis. If it arises from a Tumor, whether outside or inside, the case is hopeless. **Treatment.** In case of impacted Calculus, the question comes up of surgical operation, when it has lasted long enough to threaten death. It is vain to attempt to flush out the stone. The diet must be of such a nature, and drink restricted so as to lessen the secretion; for if the stone is not too large, and the tube is normal and elastic, even though the size of the one and the spasm of the other prevented its passage, favorable results may be obtained. Large doses of Hydragogue Diuretics must not be given. They rather do harm. Where the Anuria is due to suppression, from active congestion of the kidney, and the urine is bloody, albuminous, and contains blood casts, we must afford relief through other channels. Sweating should be promoted through Vapor Baths and by Jaborandi, and if this is not retained, by hypodermic injections of Pilocarpin, repeated according to its effect. At the same time we should promote a light laxative action of the bowels. The diet should consist of little more than skimmed milk. All stimulating diuretics should be studiously avoided. The restlessness and nervous symptoms should be controlled by Chloral and the Bromides. Opium should be avoided. Codeia and Hyoscyamia are safer. Cocaine in one of its salts, given hypodermically or internally, is both sedative and diuretic. It is very reliable, and by a continuance of this treatment favorable results are obtained, even when the prolongation of the condition makes it seem incredible. When it has come from *Nervous Shock*, and is attended with a Hysteroid element, large doses of Asafœtida and Valerian, combined with a derivative treatment, are indicated.

II. **Diuresis.** When the Urine is in excess of the normal, we say we have the Symptom of Diuresis. The amount may go up to 80, 90, 100, even 200 ounces. If it only contains the normal products of the body, the color is high and so is its specific gravity. Such Urine would contain but little solid matter to the ounce, yet, the whole amount would contain the full quantity. It may be almost colorless, like spring water, having scarcely a tinge of its normal amber color. Its Sp. Gr. may fall to 1003, 1001, even to 1000.5, the quantity being correspondingly increased. Diuresis is met with **in convalescence** from some acute diseases when the fever breaks. With the sudden break of the fever in confluent Variola, patients may in twenty-four hours shrink away to nothing. In Typhus and Pneumonia, we have this critical Diuresis. In **Hysterical patients**, we may have a copious flow of urine replacing the outburst of tears, which, otherwise, terminates nervous cases. Its pellucid appearance and its low specific gravity, aids us in our diagnosis of its Hysteroid character. We may have **vicarious Diuresis** where large collections of liquid in the cavity of the body, *e. g.*, Ascites, Ovarian Cysts, Hydro-Thorax, and Anasarca, are promptly removed and carried off in a remarkably short time. Sometimes patients have Diuresis as a **continuous Symptom.** These cases used to be called Insipid Diabetes. This term should not be used. In true Diabetes, there is, of course, Diuresis, but the urine is entirely different and contains Sugar. The condition appears to be dependent on a faulty condition of innervation. The way in which the Urine is secreted is an interesting physiological study, controlled by nerves high up. The rate of discharge is governed by the pressure in the Malpighian tufts. Increased pressure in the tufts, unless it is met with increased pressure in the blood-vessels, causes Diuresis. When the liquid gets out of the tufts, it comes in contact with the Epethelial cells of the tubes. Their function is not merely to drink back a certain amount, but they themselves are secretive. In animals whose heart has only one cavity, the urine is solid, and exists in the form of a white block. Man has a liquid urine of a highly complex character containing Kreatin, Kreatinin, Sulphates, Chlorides, Urea, Uric Acid, Phosphates, and the like. The cells of the Tubules supply these organic and inorganic salts. They are under the control of the nervous system. These cases are associated with weakness. Patients are easily tired. Sleep is broken partly, because the patient has to get up to urinate, or it may be in reality broken. There may be apparent health, however. Diuresis is a Symptom of **Organic Brain Disease.** We may find evidences of Tumor. In chronic cerebral disease, it may for a long time be a symptom. Lastly, it occurs in **Organic Kidney Disease**, in Chronic Bright's, and in Cirrhotic and contracted granular kidney. This single symptom brings us into an interesting clinical relationship.

Diagnosis. Simple Examination is all that is necessary to establish the fact. The cause requires careful attention to the symptoms.

Prognosis depends on the cause, and so does the **Treatment.** The Diuresis of *Convalescence* we let alone. To *Nervous* we pay no attention. *Vicarious* we welcome. It never does harm. It causes a little weakness, but this is soon recovered from. Diuresis, as a special symptom, requires careful study of the hygiene, diet, and the condition of the skin. Neglect of the skin is sometimes at the root of it. Certain remedies act well, Ergot especially. Full doses cure many cases of Simple Diuresis. Codeia must be used cautiously, lest a habit be formed. The Bromides, as Potassium, or the other Bromide Salts. With which ever we select, we use Iron in full doses for the Anæmia and impairment of nutrition. Electricity used properly produces decided effects in some cases. Diuresis from organic disease is beyond relief. Lesser degrees do not require any attention.

[illegible] of Renal Calculi. Pyelitis is ordinary / Calculus, [illegible]

Pyelitis or inflamn of mucous membrane of pelvis of Kidney.

Symptoms I Pain & tenderness II discharge [illegible] of mucous
III albuminous IV Epithelial cells but no tube casts.

Treatment I Rest II Mild counter irritation, III Diuretics IV Drain

Congestion of Kidneys acute & chronic

Acute
Causes I Stoppage of perspiration II Irritating action of substances
III Septic poisons IV Specific diseases.

Symptoms I Cloudy, smoking II Scanty urine with blood & albumen,
III Dull pain & a few blood casts.

Treatment I Light liquid diet II Digitalis III Rest of K. IV counter
irritation V Blisters.

Chronic
Causes I Obstruction, heart diseases II Chronic alcoholism [illegible]
Symptoms I Urine copious with albumen & maybe mucous [illegible]
no tube casts.
Treatment I [illegible] Salines II Digitalis & Ergot. III counter irritation

Bright's Disease acute & chronic

Acute
Causes I [illegible] II Sudden chill and after scarletina III Specific poisoning as in
scarlet fever IV Some chronic conditions.

Morbid Anatomy I Organ enlarged II Capsule injected & easily removed
III very bloody on section
I Epithelial cells [illegible]
II " & blood casts, & maybe Granular casts

Symptoms I Rigor or mild fever & headaches II Puffiness of face [illegible]
III Rapid breathing IV Pulmonary congestion V Vomiting
VI Dull pain in loins & tenderness there
VII Urine diminished, high colored, bloody, [illegible], albumen
VIII [illegible] diarrhoea.

Chronic
I Chronic Parenchymatous Nephritis
II " Interstitial "
III Amyloid Degeneration } of Kidney
IV Fatty "

I Chronic Parenchymatous Nephritis.
Synonyms — Desquamative Nephritis
Parenchymatous "
Tubular "
Large, white kidney of Bright.

Morbid Anatomy I Kidney enlarged & heavy II Capsule [illegible]
III Cortex enlarged IV Epithelium [illegible]
[illegible] V Hyaline casts are found.

II Chronic Interstitial Nephritis
Synonyms — Chronic granular degeneration

Morbid Anatomy — I K. [illegible] in size & weight II Capsule thick & closely
adherent. III hob-nail appearance of surface IV Cortex reduced in size V Epithelium undergoes atrophy

III Amyloid Degeneration of Kidney - not so common.

Morbid anatomy I Kidney large, pale & smooth. II Capsule not affected & strips off easy. III Cysts may be present. IV Walls of arteries & capillaries infiltrated with amyloid material. V Hyaline tube casts.

IV Fatty Degeneration of Kidney - very rare

I Organ large soft & flabby & of a pale yellowish color

II On section it is greasy & fatty

III Casts are found in the tubules

General Causes of Bright's Disease

I Previous acute attacks

II Climate (great changes in temp.)

III Excesses in eating & drinking.

IV Various toxic agencies - arsenic, Lead, Phos. & Malaria

Common Symptoms

I Failure of strength & loss of color

II Impaired digestion with sometimes morning vomiting

III Hypertrophied heart (most common in interstitial)

IV Congestion of Lungs.

V Nervous symptoms - Vision impaired, Giddiness &c

VI Dropsy

(Uraemia urea & other materials retained in the blood

Symptoms I Shortness of breath

II Convulsions.

III Colliquative Diarrhoea)

VII Discomfort in the back.

VIII Frequency of micturition

IX And urine large (polyuria)

X Albumen in urine

Diagnosis of the Various Forms

I Chronic Catarrhal

I Comes on after an acute attack.

II Dropsy is marked.

III Urine scanty, abundant, high Sp. gr. [illegible] albumen & tube casts

IV Marked tendency to Uraemia

II Chronic Interstitial

I Common in red & gouty subjects

II Dropsy is late.

III Urine copious & pale, with little albumen & a few hyaline casts

IV Duration very long.

III Amyloid Degeneration - follows [illegible]

I Is accompanied with Amyloid Liver

II Urine moderately abundant with albumen [illegible]

III Dropsy [illegible] & extensive

[illegible] Symptoms

I Sudden onset (in [illegible])

II Previous ill [illegible]

III Scanty urine

IV Much albumen [illegible]

V Rapid Dropsy

VI [illegible]

III. **Diabetes.** This is *a derangement of assimilation, marked by copious saccharine urine, deficient secretion of the skin and mucous membranes; great thirst and appetite, progressive loss of flesh and strength; temporary or permanent in its character, and often fatal in its result.* The word means "a going or flowing through." It is used now to signify the whole condition. We omit the word Mellitus. We refer only to one condition. Polyuria and Diuresis are used instead.

Causes are such as disorder the complex relation between the Nervous System and the Kidney, Stomach and Liver. We find very Varied Causes. In the first place it follows **prolonged and excessive mental strain,** particularly if accompanied by Dietetic Excess, if the Nervous System is deranged by injury, especially in a certain region. Hence, Functional derangements *dispose to*, and Organic lesions *cause it* directly. It may ensue on derangements of the Liver, Pancreas, and possibly the Stomach, where Sugar undergoes certain alterations, ultimately becoming alcohol and carbonic acid. Starch is first converted into Sugar. We each can dispose of a certain amount of sugar and starch as long as the Liver, Pancreas, etc., are normal. But on **taking too much sugar** we would recognize it in the secretions. This is Physiological and Transient. It is very different from the Pathological. The Liver produces an animal sugar—"glycogen," which has a saccharine element. It can be produced from meat. It is not improbable that in some cases there is an excess of this function. This may be another mode of production. The intimate nature of this process is very complex. In recognizing the presence of Sugar, we by no means get at the true cause. **Sex.** It is more common in males. **Heredity.** It is sometimes substituted by Gout, Rheumatism, Bright's, or some serious Nervous Disease, as Epilepsy. It has an affinity with other diseases which result from disturbances of assimilation. **Race.** It is exceptionally frequent in Jews. No explanation, except the close inter-marriage of this race, is as yet satisfactory.

Symptoms are very marked. The cases begin **acutely** or **gradually.** An Acute may run its course in a very few weeks to a fatal result, but usually lasts for years. The age at which it begins makes a difference. The younger the child the worse the case. **Excessive Urination,** or Polyuria. Every time there is a considerable amount discharged; but there may be Diabetes with fifty ounces of urine. As much as fifteen or sixteen pints in twenty-four hours may be passed. This urine is of a pale color; has a sweetish, *mawkish smell*, like new-mown hay. The urine dries and leaves a whitish stain. Its *specific gravity* is higher than normal. The increase of density is due to the sugar. This urine contains glucose. Loss of Sexual Function or **Impotence,** is one of the most prominent symptoms of which patients complain, and also of **Pruritus of the Genitals.** The fermentation of the urine irritates the Genitals and thighs. **Perversion of Appetite,** the patient eating largely, but not being satisfied. There may be morbid craving. *Thirst* is almost constant. The **Tongue** is red and dry. The **Mouth** is dry and pasty. Despite this ingestion of food and drink, the **strength and flesh progressively fail.** The patient feels dragged out, loses his interest and energy in his pursuits. **Perspiration** is scanty, and almost absent. The slightest irritation produces *Boils*, and even *Carbuncles*. Slight injuries produce *Sloughing* and *Gangrene;* hence operations are fatal. Death occurs either from *the development of phthisis*—this is peculiarly latent, rapid, and uninfluenced by treatment, the Nervous Centres being blunted—or from *Malnutrition*, *Bright's Disease*, or there may be a *Paralysis* of some Nervous Centre, associated with *hyper-pyrexia*. It may be entirely cured, but complete cures are rare. It may be kept in check. Relief alone can be hoped for. We may have Diabetes of an intermittent character.

Diagnosis is very easy. Our suspicions being aroused, simple examination of the urine reveals it.

Prognosis is gathered from what has been said. It is hopeless in cases of organic disease. Yet, it is bad if the disease is hereditary; bad when it appears in young subjects; bad when after cutting off Sugar from the diet, it yet appears in the urine. It is very bad when symptoms of Bright's disease are combined. It is hopeless when phthisis has appeared. When it is mild, it may be cured.

Treatment. It is principally dietetic. Certain articles can no longer be assimilated properly. We must cut off Starch and Sugar from the diet then by using proper hygiene, the complex combination of the system may be repaired. Avoid all articles which contain Sugar, *e. g.*, Milk, Malt Liquors (which also have starch). It is more serious in reference to Liquids. Glycerin can be converted into a Saccharine matter in the body. "Mannite" may be worth a trial, but it is better that the patient should learn to do without it. The Vegetables, Cereals, etc., must be set aside. Let him use gluten bread, crackers, or mush, or bread made from almond flour. Lemon juice may be allowed. The bill of fare must be carefully prepared and the preparation varied. A little acidulous wine or freely diluted whiskey and gin may be allowed. But their avoidance is better than their use. There should soon be a material improvement. If you get no change, let the patient go back to mixed diet. Some are better when there is a little sugar in their urine. The skin must be protected and Temperature must be maintained by avoiding excessive fatigue. The least irritation must be avoided. Mental fatigue and worry may induce a rapidly fatal result.

Drugs. The alkaline mineral waters, weak solutions of the carbonates, and certain waters, as our own Bedford or Carlsbad, Clysmic, and Vichey, are valuable, and combined with hygiene are most useful sometimes. Opium and Codeia may be used with advantage, as tending to restrict the excessive craving for drink and to check the urine. When well borne, gr. xv per diem have been taken. Nutrients, as Iron and Cod Liver Oil, are useful, but must be given with reference to the Stomach. On special modes of Treatment, as Skimmed Milk, some recover. Some do well on "Koumyss," in which the sugar has been fermented and the casein disintegrated. *Ergot* will check the flow of urine, but will not check the disturbed function of assimilation. The *Bromides* may allay irritation of the Nerve Centres. *Bromide of Arsenic*, combining the sedative quality of Bromide with the alterative action of the Arsenic, has been recommended. First cautiously restrict the diet. Gradually bring the patient down to a Diabetic diet. Then get at the true cause and adapt your drugs accordingly. If Hepatic, the Liver must be treated. If it is Nervous, nutrients and the Bromides of Arsenic are indicated. If neurotic, give Bromides and Cod Liver Oil. In connection with disorders of digestion, the following Prescription presents a convenient combination.

℞ Strychniæ, gr. ss,
Acidi Nitro Muriatici Diluti, fʒii-iii,
Pepsin, gr. xxxii,
Glycerin or Tinct. Cardamon. Co., f℥ss,
Aquam ad, f℥iv.
Mft. Sign: fʒi ter die post cibum.

IV. **Reaction.** This should be taken immediately. 1. *Acidity* is marked in Indigestion, Rheumatism, etc. It is rendered neutral by taking Alkalies. 2. *Alkalinity* occurs—1. In Cystitis from the development of Ammonia from the Mucus; 2. From the reception of too much Alkali, *e.g.*, in Rheumatism.

V. **Detection of Abnormalities.**

1. **Albumen.** A slight amount may be consistent with health. We must not assume from a trace of Albumen that Nephritis exists. On the ingestion of food it is physiological, and there is a functional Albuminuria.

2. **Phosphatic Diathesis.** We have primarily a deranged action of the stomach. The urine is pale, and readily undergoes decomposition. It is generally neutral; but, when acid phosphate is present, its reaction may be acid. On boiling we get turbidity, which clears up on the addition of Nitric Acid. *Microscopic examination* reveals the presence of phosphatic crystals. Atonic Dyspepsia usually co-exists, also anæmia and nervous debility. It is not due to nervous exhaustion primarily, but rather to nervous indigestion.

The **Symptoms** are usually those of the condition causing this state, rather than symptoms referred to the kidney.

Diagnosis is easy by Chemical and Microscopical tests.

The **Prognosis** is favorable. There is less danger of Calculi forming than in the Uric acid diathesis.

The **Treatment** has reference to the general health and the underlying conditions. It is difficult to lay down rules for diet. Most cases do well on a nourishing diet without much saccharine or farinaceous foods. Vegetables and fruit and a moderate amount of exercise may be allowed. As tonics we give mineral acids, strychnia, and vegetable bitters.

3. **Uric Acid Diathesis.** The urine is high colored and of a high specific gravity and of a strongly acid reaction. After the addition of Nitric Acid we have, on boiling, a reddish, sandy deposit, either of pure uric acid crystals or of one of its salts. This is called "*Brick-Dust*" or Lateritious deposit. This condition is found in connection with the Gouty Diathesis. It is seen in high livers and hard drinkers, and in those who take insufficient out-door exercise.

Symptoms of Lithæmia. The **tongue** is red and coated. The stomach irritable with **acid dyspepsia.** There is a disposition to **bilious derangement** with dull headaches. The **bowels**, particularly the lower, are congested, with a tendency to **hemorrhoids.** There are wandering **rheumatic pains.**

The **Diagnosis** is easily made from an examination of the urine, and from the character of the patient.

The **Prognosis** is rather serious from the tendency to Renal and Vesical Calculi—most Calculi containing a uric acid nucleus—and from the difficulty experienced in inducing the patient to give up his injurious habits.

The **Treatment** is dietetic and regiminal. Restrict the diet. Highly seasoned and sweet dishes, alcohol, etc., must be prohibited. Recommend outdoor exercise strongly. This condition is often seen in women at the menopause when they have no call for exertion. Depurative remedies as alkaline and mineral waters, *e.g.*, Karlsbad, Vichy, or diluent waters, as Poland, are useful. When secondary troubles arise we may require Potassium Iodide and alterative diuretics.

4. **Oxaluria, or Oxalic Acid Diathesis** is a modification of the last. It is often associated with the presence of urates or of phosphates. The urine is pale, somewhat acid, and contains mucus. Rarely do we have a copious deposit. This condition is associated with the same tendencies as the last. The digestion, however, is weaker, and there is a more pronounced

tendency to nervous disorders, *e. g.*, Hypochondriasis. Oxaluria is merely a symptom of nervous dyspepsia. It may be caused by the ingestion of Rhubarb.

The **Diagnosis** is not very easy. The deposit is small and often overlooked.

Prognosis is perplexing. Cases are hard to relieve. There is not, however, so much tendency to the formation of calculi as in the uric acid diathesis.

The **Treatment** in some cases is that of Lithæmia combined with a tonic stomach treatment.

II. **Renal Calculi.** These may occur *in the substance of the Kidney*, *in the pelvis*, or in *other places;* thus giving rise to various anatomical results, *e. g.*, Suppurative Inflammation or Suppurative Nephritis. In the Pelvis or Calix, Pyelitis is common. Obstruction of the Calix may cause a Retention Cyst. Where the ureter is obstructed we may have a cystic Degeneration leading to Hydronephrosis. Symptoms vary with the locality of the calculi. 1. Where they are **Imbedded in the Substance** the **Symptoms** are obscure. There is more or less **pain in the back** which may simulate Neuralgia, Lumbago, etc. Reflex symptoms, *e. g.*, **Neuralgic pains** or **dyspepsia** are set up. There are no distinct changes in the urine. The calculus may remain encapsuled or may get into the pelvis.

2. **Calculi in the Pelvis** and passing downwards give rise to **Renal Colic** with intense pains which come on suddenly. There is **pain at the end of the penis,** retraction of the **testicles** and a frequent **desire to micturate.** The patient is **pale,** and **vomits.** The extremities are cold. The **first urine** passed, after an attack, is **bloody.** The blood may disappear in two or three days. The pain may end as suddenly as it began. As soon as the calculus drops into the bladder the pain stops.

The **Duration** of the attack lasts from a few minutes to as many days, depending on the size and shape of the stone. This varies from a pin's head to a date seed. The stone may come away with the urine immediately after an attack. If not discharged it may cause Cystitis, and deposits form about it as a nucleus. It occurs most frequently in males, usually adults. There may be only one attack, or several.

Diagnosis. 1. **From Passage of Gall-Stones**—1. The pains do not radiate to the shoulder. 2. There is less vomiting. 3. There is straining at micturition. 4. Jaundice is absent. 5. The stone is not found in the stool, but may appear in the urine. 6. Hæmaturia is common.

2. In **Intestinal Pain**—1. The pain is in front, about the umbilicus. 2. The attack is not so sudden. 3. There "**may**" be straining at micturition; but 4. We have no hæmaturia. 5. There is a history of cold, eating indigestible food, etc.

3. In **Lead Colic** we have a history of poisoning.

4. In **Nephralgia,** or Neuralgia of Kidney, there is—1. No Hæmaturia. 2. No stone in the urine. Otherwise they are not distinguishable.

Prognosis is favorable for life. Patients rarely die, but usually are liable to more than one attack.

Terminations. 1. There may be **Occlusion of the Ureter** by a large stone. There is fixed pain, fever and evidences of resorption, and then uræmia. Death often results. 2. The **symptoms may subside.** The sound Kidney does the work of the other, discharging normal urine. The stone may even crumble and be discharged.

Treatment. 1. During the **Attack,** Hypodermic injections of Morphia, Opium by the Rectum, or Chlorodyne by the mouth. Where

Treatment of Acute & Chronic Nephritis.
1 Keep skin active (vapor baths &c)
- Confine patient to bed
I Restrict diet, allow no stimulants
I Keep bowels open
2 Give much H_2O

Haematuria - blood in urine

Causes I Congestion of kidneys
II Acute Bright's disease
III Presence of Calculi
IV Cancer
V fevers Malarious, fevers, Typhus.

Treatment
I Remove cause
II Tannin, Gallic acid, Ergot, Sulph of Iron &c

Haemoglobinuria or Haematinuria - no blood corp. found in urine but the envelopes of the corps. show haemoglobin.

Causes I Rapid absorption of cold
II Poisoning by arsenic & Carbolic acid.

Treatment I Hygiene & Quinine

Kidney - (Continued)

Acute Interstitial or Suppurative Nephritis

Pyelo-Nephritis The most common form is that in which a number of minute abscesses are present in one or both kidneys (these abscesses may be pyemic or metastatic)

Symptoms (1) Urine may contain pus corpuscles
(2) chills, irregular fever, delirium, somnolence, coma &c

Causes (1) Infectious emboli as in pyaemia & ulcerative endocarditis
(2) Traumatisms

Pyelo-nephritis occurs with stricture of the urethra, enlarged prostate, gonorrhoea, stone in bladder, cystitis &c

Treatment - Remove cause if possible & treat the general symptoms.

Pyelitis - Pyonephrosis - is an inflammation of the mucous membrane of the renal pelvis -

Sympts (1) attacks of renal colic, pain in small of the back
(2) mucous, pus and blood in the urine
(3) fever -

Causes (1) presence of calculi, irritant action of [illegible], (2) obstruction to the flow of urine as stricture &c

Treatment - Remove cause (2) apply quieting & soothing applications to the loins, (3) Give balsam of copaiba if it becomes chronic, (4) Give [illegible] (5) [illegible] as colchicum (6) [illegible] & then give [illegible]

Renal Colic of Nephro-lithiasis. - Renal colic is due to the passage of a stone —

Symptoms (1) Pain sudden & in kidney region (most [illegible])
(2) Pain radiates along course of ureter to groin & thigh
(3) In male pain is often referred to the testicle —
(4) Urine is diminished & may be bloody
(5) Frequent desire to micturate
(6) Constitutional symptoms are [illegible]

Treatment — much water & morphia or chloroform during the paroxysm, warm bath &c —

In the intervals treat the nephro-lithiasis.

If uric acid gravel urine will be acid & then give alkaline remedies as K. &c

If the concretions are composed of earthy phosphates or earthy salts give the mineral acids —

Renal Tuberculosis - Renal Phthisis - Appears in the kidney in the following conditions -

I In acute miliary tuberculosis
II In pulmonary phthisis (as a secondary event)
III In primary tuberculosis of the genito-urinary organs.

Symptoms are usually those of [illegible] pyelitis & cystitis combined
(I) Pain in kidney [illegible]
(2) Hematuria [illegible] which is occasionally [illegible] paroxysm
(3) Bacilli tuberculosis in urine

Movable Kidney — exists oftener than supposed
Found more frequently in the female than in the male
The right kidney is movable oftener than the left -
Both organs may be affected.
It may be congenital or acquired, mostly acquired
Found generally during the child bearing period of women

Symptoms (1) Sense of weight & dragging pains in kidney region
(2) Severe neuralgic pains
(3) Chilliness, nausea, vomiting, intense pain, prostration & anxiety
(4) Kidney swollen & sensitive to pressure

Treatment - (1) Replace the organ if possible
(2) rest - and recumbency
(3) [illegible]
(4) opiates
(5) bandage belt or abdominal supporter
(6) extirpation of the kidney

the attack is very severe, we may have to administer an anæsthetic. The patient must be kept warm and quiet, and hot applications made to the back. Give warm diluent drinks, and, for a couple of days after the attack, keep the patient at rest. 2. **To avoid further Formation**, treat the corresponding urinary Diathesis, which is usually the Lithic.

Results of Renal Calculi.

Pyelitis, or Inflammation of the mucous membrane of the pelvis of the Kidney.

Causes. 1. The **presence of Calculi.** 2. It may succeed a **discharged Calculus.** 3. The sudden **checking of perspiration** by the action of cold.

Symptoms are **Pain** and **Tenderness** in the region of the Kidney, increased by rough movement. **Muco-pus** is discharged with the urine, but there is less mucus than in Cystitis. The supernatant fluid contains **albumen** corresponding to the amount of pus. There is **frequent micturition**, and **Epithelial cells** from the upper portion of the ureters appear, but tube casts are absent. Patients grow very **anæmic**, and **Œdema** of the feet may supervene, thus simulating Nephritis.

Prognosis is serious. The disease is liable to be chronic. It is hard to cure, and relapses are frequent, particularly where the calculus is retained; this keeps up the inflammation. The presence of blood in the urine, with spells of colic, should make us suspect this condition.

Treatment is unsatisfactory and indirect. We must treat the existing diathesis. Rest is important, and must often be absolute. Protracted mild counter irritation over the Renal region, together with the use of mineral waters and the administration of alterative Diuretics, *e. g.*, Fluid extract of Buchu and Uva Ursi, and Triticum Repens, are indicated. Belladonna is often associated with these diuretics.

℞ Liq. Potas. m. v-x, or
Sod. Bicarb. gr. v-x,
Fl. Ext. Buchu m. viij. xx,
Tinct. Belladon. gtt. v-x,
Syr. Zingib. or Sarsap. Co. q. s. ad. f℥ij.

In most cases iron must be used for the anæmia. Too many remedies must not be given, for fear of disturbing digestion. Much may be done by the prolonged use of Skimmed Milk, Koumyss, or Whey. When the inflammation persists, and the membrane is becoming degenerated, the question of excision of the Kidney or of the Stone must be considered.

III. **Congestion of the Kidneys** is—1. Acute. 2. Chronic.

1. The **Acute** is only slightly separated from inflammation.

Causes. 1. The **sudden checking of skin circulation**, thus throwing upon the Kidneys, which are the counterpart of the skin, an abnormal amount of work. 2. The **irritant action** of certain substances, *e. g.*, Alcohol, Cantharides, Turpentine, etc. 3. **Septic** poisons; and 4. **Specific** Diseases.

Symptoms are obscure, unless the action has gone on to tissue change. There is **alteration of the Epithelium**, with **cloudy swelling.** The **urine** is frequently **scanty**, high-colored, with some blood and albumen. There are no tube casts, except, perhaps, a few blood casts. The patient suffers dull pain, or there may be only a sense of discomfort. **Anuria** may come on, giving rise to uræmic symptoms.

Treatment. Light liquid diet and diluent drinks should be given. Infusion of Digitalis, together with Acetate of Potash, may be used as a hydragogue Diuretic. Counter-irritation or depletion may be indicated. A blister of Cantharides should never be used where there is any irritation of the genito-urinary tract.

2. **Chronic Congestion of the Kidney.**

Causes. Obstructive Disease of the Heart. Where there is long-standing chronic engorgement, the Kidney becomes **Cyanotic,** *i. e.*, it presents a bluish induration. It may be present, but in a more imperfect form, in **Chronic Alcoholism.**

Symptoms are those of the cause. The Urine is **copious.** Its specific gravity varies with the amount. **Albumen** is quite common. There should be **no epithelial or granular tube casts.** We may find **mucoid cylinders,** and rarely Hyaline casts.

Prognosis. Cyanotic induration usually remains as such, and does not run into Bright's Disease, although such patients are liable to intercurrent attacks of Bright's Disease. It may run into the interstitial form, and Organic disease develop from this.

Treatment of the skin and stomach is very important. Dilute Salines, such as mild mineral waters, which can easily be made from solutions of Lithium or Potassium salts, should be freely used. The occupation, dwelling, habits, etc., must be improved. Digitalis and Ergot are indicated to influence the blood-vessels and relieve the congestion. Counter-irritation should be applied over the kidney, and a flannel belt worn around the renal zone.

IV. **Bright's Disease.** Under this we consider Acute and Chronic Nephritis in their various forms.

1. **Acute Bright's** may—1. Appear as an *acute* and *primary* attack; or, 2. As an *intercurrent* condition.

Causes are those of inflammation, Sudden checking of the secretion of the skin, Specific poisons accompanied usually at the same time by a chill, *e. g.*, as in Scarlet fever. When the apparent cause seems to be insufficient, there has probably been some chronic condition.

Morbid Anatomy—1. *Macroscopically.* The organ is enlarged and heavier than normal. The Capsule is injected and easily removed. The veins are sharply visible. On section it is very bloody. The Cortex is coarse and the Pyramids are deeply red. 2. *Microscopically.* The Epithelial Cells are affected by Catarrhal Inflammation and Cloudy Swelling. There is a rapid overgrowth and proliferation with an intermixture of some colorless blood corpuscles as well as red corpuscles and tube casts, which may be either Epithelial and Blood casts or pure Granular casts. The vessels of the Kidney are engorged. There is no marked change in the interstitial stroma unless there has been some previous alteration.

Symptoms—1. *General.* There is often a **Rigor** or chill, with moderate **fever** and **headache.** The **surface** is pale. The **pulse** is tense and full, but only moderately frequent. The **breathing** is rapid. There is often **bronchial Irritation** or **Pulmonary Congestion. Vomiting** is common, and sometimes we find **gastro-intestinal catarrh** with loose stools. There are **dull pains in the loins** and **soreness on pressure.** 2. *Urinary.* The urine is **diminished** in quantity and **high colored.** It may be **reddish** from the presence of blood, and contains much **albumen,** with a **flocculent sediment** of red and colorless blood corpuscles. The amount of urine may be nil, or, where micturition is frequent, it may be as high as 16 ounces per diem. In intercurrent cases the symptoms are less violent. The patient has a **blanched, pasty look** about the face. There is dull **headache,** and sleep is **restless.** There is often dullness of the intellect, and **muscular twitchings** may occur during sleep. In

Brights Disease is acute & chronic

Acute. the synonims, are Acute Catarrhal Nephritis acute tubular nephritis & Acute desquamative nephritis,

Chronic – chronic Catarrhal Nephritis, Chronic interstitial nephritis.

Amyloid & Fatty degeneration of Kidney.

Urine in Acute brights disease – quantity diminished or suppressed

In chronic Catarrhal Nephritis it is about normal in quantity
" " Interstitial " " " above " " "

In amyloid degeneration it is increased in quantity
" Fatty " " " normal " "

Sp. gr. of Urine – Acute ~~Chronic~~ Catarrhal Nephritis. high
Chronic " " normal
" Interstitial " 1005 to 1006.
firm on heat,

Albumen – Acute Catarrhal Nephritis – Great, solidify-
In Amyloid there is much albumen but not so much as in the Acute Catarrhal Nephritis
In chronic catarrhal nephritis – considerable
" " Interstitial " very small

Sediment

In acute Catarrhal nephritis – blood, tube casts, great in no. hyaline, epithelial & bloody.
In chronic C. N. epithelial casts – few in number
" " I. N. hyaline " " " " narrow + small
Amyloid – broad & hyaline & waxy tube casts
Fatty – Fatty tube casts
Hence blood is characteristic of acute nephritis

Urine (continued)

Renal Haematuria - haematuria or bloody urine may come from kidney, pelvis of kidney, ureter, bladder or urethra

Endemic Haematuria is a form of haematuria which occurs in Brazil, Egypt, Cape of Good Hope & other tropical countries. it is caused by a parasite (the distoma haematobium)

Diabetes Insipidus / is a disease characterized by an excess of water in the urine - quantity of urine may amount to 15 or 20 quarts per diem.
Sp. gr. varies between 1003 & 1007 -
There is no essential change in the composition of the urine except the excess of water
There is great thirst.
Prognosis is good [illegible] recovery is rare -
Treatment - Fl. ext. ergot [illegible] doses 3 i-d
Gallic Acid, dilute nitric acid
valerian, ergotine, tonics

Diabetes Mellitus - Sugar in the urine
Clinical History
(1) Polyuria
(2) Urine clear & pale with sweetish odor.
(3) Sp. gr. 1025 to 1074.
(4) Reaction feebly acid
(5) Frequent micturition
(6) Sense of heat & stinging pain in urethra (pruritus)
(7) Excretion of urea increased
(8) Emaciation
(9) Increase of Appetite
(10) Great thirst -
(11) Gums inflamed & bleed readily
(12) Sugar in faeces
(13) Constipation (as a rule)
(14) Breath sweetish (odor of hay or apples)

children we may find either **convulsions** or deep **stupor.** **Œdema** of the face, feet, or ankles may occur early in the disease. Some of these symptoms are due to the co-existence of catarrh of other mucous membranes. In some cases where they are absent at first, they may develop later from blood-poisoning. This may occur very abruptly, giving rise to **nervous disorders** in a few hours after the development of the case.

Chronic Bright's Disease.

1. Chronic Catarrhal Nephritis.
2. Chronic Interstitial Nephritis.
3. Amyloid Degeneration.
4. Fatty Degeneration.

I. **Chronic Catarrhal Nephritis** is also called Desquamative Nephritis, Parenchymatous Nephritis, Tubular Nephritis, Large White Kidney of Bright.

Morbid Anatomy. 1. *Macroscopically.* The Kidney is swollen and heavy, friable and less consistent than normal. The Capsule is not affected, and strips off easily. Its surface is pale and mottled. On section, the cortex is found to be enlarged to two or three times its natural size, is coarsely granular, and has a pale, blotchy look. The Pyramids are streaked, of a dark red color. 2. *Microscopically.* The tubules are irregularly filled with Detritus. The Epithelium is swollen and desquamating, and Hyaline casts are found in the urine. Both Kidneys are usually involved, one being generally more so than the other. This form may occur with other forms of Bright's disease, and be accompanied with Amyloid and Fatty change.

II. **Chronic Interstitial Nephritis.** This is a chronic granular degeneration. It may begin as—1. A primary interstitial process. 2. As an atrophic degeneration of cells. 3. More or less Catarrhal Nephritis may co-exist with it; or, 4. It may be accompanied with Amyloid changes. Hence its appearance is modified.

Morbid Anatomy. 1. *Macroscopically.* The Kidney is reduced in size and weight, but its consistency is increased. The capsule is thick and opaque, and closely adherent. Its surface is rough and granulated, giving it a "hob-nail" appearance. The organ is tough and hard to tear. Section shows the cortex to be reduced. The Pyramids are pale. 2. *Microscopically.* The Epithelial lining of the tubes has undergone atrophy from an interference with the circulation. The Epithelium is neither swollen nor desquamated. The Interstitial connective tissue is greatly increased. Cysts are formed from dilatation of the tubules or Malpighian bodies, owing to the contraction of the connective tissue. Both organs are usually uniformly involved.

III. **Amyloid Degeneration of the Kidney** is not so common.

Morbid Anatomy. 1. *Macroscopically.* The Kidney is larger than normal, pale, smooth and friable. The capsule is not affected and strips off easily. On section the parts are seen to retain their normal proportion, but present a waxy translucency. Cysts may be present. 2. *Microscopically.* The walls of the straight intertubular arteries and of the capillaries of the Malpighian Tufts are infiltrated with an amyloid material. The tubes contain Hyaline Cylinders, which react with Iodine, giving a blue color. This condition may be found in connection with Catarrhal Nephritis, or with interstitial change.

IV. **Fatty Degeneration of the Kidney.** This may occur as a distinct condition, but this is very rare. The organ is large, soft, flabby and friable, and of a pale yellowish color. On section it is greasy and fatty. Casts are found in the tubules.

General Causes of Bright's Disease. 1. Previous **acute** attacks. 2. **Climatic influences,** *e. g.*, great changes in temperature, damp climates and districts, faultily drained dwellings, etc. 3. **Mal-hygiene** of the person, wet feet, poor clothing, etc. 4. **Excesses** in eating and drinking. 5. Various **toxic agencies,** *e. g.*, Arsenic, Lead, Phosphorous and Malarial poisoning.

The type which the case will assume depends upon the vulnerability of the different tissues of the patient, and also is determined by the nature of the cause itself. Lead Poisoning and Gout giving rise to the interstitial, and Phosphorous and Arsenic to the catarrhal forms. Amyloid and Fatty Degenerations are brought about by their usual causes.

Symptoms Common to all Forms of Bright's Disease.

The earliest and most common are a progressive—1. **Failure of strength;** and 2. **Loss of color.** The anæmia is intense, the patient often assuming a waxy hue. 3. The **digestion** is gradually impaired, and there may be constant **morning vomiting** before eating. 4. The condition of the **bowels** is very variable; usually they are sluggish. 5. The **heart** is often hypertrophied. This is most common in the *Interstitial* form, and may be associated with Atheroma giving a murmur. May be easily disturbed by a little exertion. Palpitation and irregularity of action are common in this form. 6. The **dyspnœa** may almost simulate asthma. 7. There is often **congestion of the lungs.** 8. **Nervous Symptoms** may be very marked. *Vision* may be impaired, and blindness even result. *Tinnitus Aurium* is frequent, or there may even be Deafness. Giddiness, Confusion of the mind, Forgetfulness and Drowsiness are common, and changes of temper have often been noted. 9. **Œdema** begins usually about the face. When the patient is long on his feet it may be very prominent about the ankles. 10. There is a great tendency to **internal inflammation** and dropsy, *e. g.*, Pleurisy and Pericarditis, especially in *Catarrhal* Nephritis, etc. The closing stages are ushered in by blood poisoning and uræmia.

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Uræmia. This term arose from the supposition that urea is retained in the blood and gives rise to the condition. However, not only urea but other materials are accumulated in the blood, and further, new derivatives are produced, which, in turn, together with the wide-spread changes elsewhere, produce the symptoms. It may assume different forms. It may be sudden or gradual, and may come on only towards the close of the disease, or at any time, as an intercurrent attack.

Symptoms are: 1. Excessive **shortness of breath** which is known as uræmic dyspnœa. This may come on with increasing drowsiness, mild **delirium,** ending in **coma** and **death.** 2. **Convulsive** attacks. 3. In some cases it may manifest itself by uncontrollable **colliquitive diarrhœa.** 4. In others the patient dies of pneumonia, dysentery, or apoplexy with partial or complete hemiplegia. Apoplexy is most common in Interstitial because the Blood Vessels throughout the body are affected.

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11. There is generally more or less **discomfort in the back** which may amount to deep-seated pain. In some cases, however, the pain may be entirely absent. 12. Increased **frequency of micturition.** The patient may have to urinate during the night. 13. The **Urine** may appear natural, but is often paler and clearer than normal, especially in chronic cases. It is often *cloudy* from intercurrent attacks of congestion. The **Amount** in the chronic forms is large; in the interstitial it is excessive. This is known as

(15) Skin dry and rough
(16) Tempt. usually decreased (96° in axilla)
(17) Itching of skin & eruptions, Gangrene &c
(18) Muscular feebleness
(19) Nervous symptoms
    (1) Patient irritable
    (2) neuralgias
    (3) absence of knee phenomenon
    (4) Diabetic Coma preceded by premonitory symptoms as
        headache, vomiting, rapidity
        restlessness & noisy delirium

Treatment is essential dietetic
(1) Exclude sugar and starch from the diet.
(2) " Bread, rice, flour, vermicelli
(3) " Livers of all kind, even of fowl &c
(4) See Food-list page 937 Flint
(5) Restrict amt of fluids (moderately)
(6) Give Soda Bicarb or Alkaline waters
(7) Opium in form of codeia
(8) Strychnia & Salicylic Acid
(9) Protect body from atmospheric changes
(10) [illegible]

polyuria. In the *Catarrhal* form it is about normal. In *Amyloid Degeneration* it is free. In an intercurrent acute attack, scanty. Towards the close, particularly in the *catarrhal* form, the flow is scanty and often suppressed. A steady decrease is a bad sign. The **Specific Gravity** is influenced by the amount, but it is generally lower than normal. Especially is this the case in interstitial. It is less so in amyloid degeneration and least so in the chronic catarrhal form. **Albumen** is present in all cases of chronic Bright's Disease, and is increased after exercise and meals. It is abundant in the catarrhal, and scantiest in the chronic interstitial form. In this last it may be present only as a trace. It is moderate in Amyloid. Only in extremely rare cases is no albumen found. As the urine becomes scantier, albumen increases. **Urea** is nearly always diminished. When uræmia exists, it is markedly lessened in the urine, but its odor is exhaled from the sweat, breath, etc. **Sediment** is most marked in the catarrhal form, and consists of Epithelial cells, Leucocytes, Red Blood Corpuscles, and Tube casts. These latter are granular, epithelial, fatty, or hyaline. There may be two or three in each drop. There is very little in the Interstitial form. The urine is cloudy and there may be a few hyaline casts. In *amyloid* degeneration, tube casts are more numerous. They are larger than in interstitial and may give the iodine reaction.

The **Duration** of Bright's Disease is from one year to twenty.

Diagnosis of the Various Forms.

I. **Chronic Catarrhal** comes on generally after an acute attack. Dropsy is early. The urine is less abundant and of a higher specific gravity, containing albumen and tube casts. Inflammations are common, and there is a marked tendency to uræmia.

II. **Chronic Interstitial** is insidious. It is most common in old and gouty subjects, and is attended with changes in the arterial system. Dropsy is late. The urine is copious and pale, with but little albumen and few Hyaline casts. Inflammatory complications are not so common. Duration is very long.

III. **Amyloid Degeneration** follows Syphilis, etc., and is associated with Amyloid liver, etc. The urine is moderately abundant, with a moderate amount of albumen, casts, etc. Dropsy is early and extensive. Duration is less than in interstitial, greater than in the catarrhal form. Persons of Gouty Diathesis, with tense radials and a marked accentuation of the first sound, accompanied by a tendency to Polyuria, and who are liable to disturbances of breathing, should be suspected of nephritis. This is known as the pre-albuminuric stage.

Prognosis in both forms, whether acute or chronic, is difficult.

I. The worst *Acute* cases may recover absolutely.

Unfavorable symptoms are—1. A sudden onset. 2. Previous ill condition. 3. Scanty urine. 4. Copious Albumen and tube casts. 5. Rapid Dropsy. 6. The occurrence of inflammatory symptoms. This form is more favorable after scarlet fever than when idiopathic.

II. Of *Chronic* forms, Amyloid is always fatal. In advanced Interstitial, cure is impossible and death is inevitable. In the early stage, life may be prolonged by treatment for some time. In Chronic Catarrhal the Prognosis is most hopeful; even after years the Kidney may become useful. Marked Cardiac or nervous derangement, Persistent Dyspnœa or dropsy, or Decrease in urine indicate the fatal termination.

Treatment of Acute and Chronic Nephritis.

I. **Acute.** Maintain the skin in an active and perfect condition. Confine the person to bed, and secure good ventilation, clothing, etc. The diet must be restricted and no stimulants be allowed. Keep the bowels open by the use of laxatives, as Bitartrate of Potash, Epsom Salts, etc., in mild but sufficient doses to secure one or two stools per day. In the early stages, when there is fever, we may give Calomel, Ipecac, and Digitalis, thus obtaining a double result. Digitalis is a non-irritant diuretic. It may be given in small doses at short intervals. For activity of the skin, vapor baths or the cautious use of Jaborandi, or hypodermic injections of Pilocarpin are indicated. Where the nervous symptoms are urgent, stronger laxatives and purgatives. After sweating is set up we may apply cups over the region of the kidney, followed by the application of hot sand-bags. This causes a slight irritation. Blisters must not be used. Opiates must be avoided, as they dry the skin and lessen the urinary secretion. Where sedatives are absolutely necessary, use Chloral and Bromide of Potassium. Chloral by enema is of great value where there is a tendency to uræmia and where the stomach is non-retentive. Gr. x to xv in aquæ f℥ij act very powerfully, especially in the uræmia of child-birth.

II. **Chronic.** Climate is of the greatest importance. It should be mild and not changeable. Whether it is moist or dry it is of not much moment. If possible secure pure spring water with small proportions of mild salines, especially Ferruginous salines. The body clothing is of more importance than in Phthisis. Personal hygiene is absolutely essential. We should recommend dry friction, warm baths with a cold douche, Turkish baths, or inunctions, according to the patient's condition. The diet must be conducted on scientific principles. Milk is a diuretic, and must always be used, whether in the form of pure milk or skimmed, whey or rennet, will depend on the digestive capacity. If it is not well borne, a more mixed diet is indicated, *e. g.*, of lean meat, either broiled or minced, with a small amount of vegetable matter. Others do best on cereals with the addition of a little fruit and milk. The free use of pure spring water is an essential.

V. **Hæmaturia.** Blood may occur in the urine in any amount from a mere trace to pure blood. The urine may only be smoky from its presence or it may occur in clots. Microscopically, the corpuscles are seen to be shrunken from contact with the urine. With these may be blood casts and fibrin.

Causes. 1. It is a symptom of **severe congestion** of the Kidney. 2. In **Acute Bright's** Disease it is in small quantity and is mixed with tube casts. 3. The blood may come only from the **Bladder**, either from the *presence of Calculi*, or from a *hemorrhoidal or varicose state of the vesical veins.* This latter, though lasting for many years, may not injure the health. We have descriptive evidences of Cystic irritation, but sounding gives no results. In the absence of Bright's disease there are no tube casts. 4. **Cancer** or Vascular Polypi. 5. **Renal Calculi.** Here the urine is often copious. 6. It may be **endemic** from the entrance of a parasite through water. 7. It may arise in the course of **Malaria, Yellow fever** and **Typhus**, especially in the Hemorrhagic form. It occurs very frequently in Malarial districts.

Prognosis depends upon the cause.

Treatment is that of the cause. Where it is abundant give full doses of Quinine, especially when it is paroxysmal. Other drugs, as Gallic Acid, Ergot, Erigeron, Sulphate of Iron may be used. When it comes from the Bladder combine with local measures, such as ice bladders over the pubes, enemas of very cold water and suppositories of ice in the rectum. Astringent injections are bad in all but very severe cases.

VI. **Hæmoglobinuria, or Hæmatinuria.** Here blood corpuscles are not found in the urine, but the envelopes of the corpuscles are seen. Spectrum Analysis reveals hæmaglobin.

Cause. It may arise from the rapid absorption of a clot in extra-uterine fœtation, or in the course of poisoning by Arsenic and Carbonic Acid. It is rare in simple congestion.

Symptoms. It is paroxysmal and returns at irregular intervals. It is especially noted in Malarial districts, though the patient may not previously have shown any malarial symptoms.

Its **Pathology** is obscure. There is no known or recognizable cause for the blood. It is connected in many cases with malarial toxæmia; in others with neurosis of the ganglia of the Kidney.

Treatment. Extreme attention must be paid to personal hygiene. Avoid chilling of the surface and nervous exhaustion. Travel and change of residence may be required. Quinine in large doses exerts a beneficial influence.

VII. **Chyluria, or Lymphangioma of the Bladder** is very rare. The urine is milky, and under the microscope fat globules appear. It is met with in tropical countries and is due to the presence of a parasite.

VIII. **Morbid Growths of the Kidney.**

1 **Hydronephrosis.** Here we have the formation of a **Cyst.** The weight of the Kidney may be increased to seventeen pounds.

Causes. 1. **Obstruction** of the ureter, *e. g.*, by a calculus. 2. **Degeneration** of the substance of the Kidney with obstruction of the tubules. This is very often seen in interstitial nephritis.

Symptoms, if only one Kidney is involved, are very obscure. By deep palpation, a **tumor** in the renal region is recognized, extending outwards and forwards and not movable. On turning the patient the area of **renal dullness is increased,** and if the tumor be very large we may obtain **fluctuation.**

Diagnosis. If it is near the surface, on the introduction of an exploratory needle, we obtain fluid, containing salts of urine. Pressure on the non-affected ureter will show no urine entering the bladder from the affected side.

Treatment. On recognizing the condition, remove the Kidney, or only the calculus if the Kidney structure is not too much disintegrated.

II. **Renal Cancer.** Primary is not rare, but is more common in children. We find Carcinoma, or round-cell Sarcoma.

Symptoms. After a period of apparently unintelligible distress, enlargement of the abdomen takes place. The tumor does not fluctuate, though it may seem to do so. The urine is often unchanged. It may contain a little blood from time to time and disintegrated cells of indefinite shape. Another part of the Kidney may be affected by Bright's Disease and then there is albuminuria.

Diagnosis is based on—1. The presence and character of the tumor. 2. The progressive failure of general health; and, 3. The absence of liquid on tapping.

III. **Perinephritis** is where there is an inflammation of the outer surface of the Kidney going on to the formation of an abscess. It may be traumatic or attend upon Scrofulosis.

Symptoms are obscure. In the early stage it may simulate incipient spine disease. The patient holds himself erect and stiff and has pain on movement. This is accompanied with febrile action and failure of health. Later on we have hectic fever.

Diagnosis is made by exploratory puncture.

Treatment consists in incision and drainage.

III. DISEASES OF THE HEART.

I. **Pericarditis.** The pericardium is subject to—1. **Inflammation,** which may be Acute or Chronic. 2. **Effusions**, not the result of inflammation. 3. **Gaseous accumulation**, or Pneumocardium, which is rare; and 4. **Growths**, which also are rare.

Causes of Pericarditis are—1. **Cold**, etc. 2. **Extension** of **inflammation**, from—(a) The Pleura, (b) the Heart itself. 3. **Wounds.** (a) Punctured, (b) Contused, and (c) from fractures. 4. **Rheumatism**; but this is not so common a cause as in endocarditis. 5. **Bright's disease.** 6. **Septic dseases.**

Symptoms. There is—1. **Pain** and tenderness, referred to the region of the heart. 2. **Fever**, with rapid irritated pulse. 3. Short dry **cough**, which is sympathetic. 4. **Friction sound** over the heart, *which keeps time with the beat.* This sound is superficial, has no relation to breathing, and continues if the patient holds his breath. 5. There is **no change in the area of dullness.** 6. There is an **absence of Pulmonary symptoms** to explain this condition, except when the disease is secondary to pathological changes elsewhere.

When the Effusion takes place, the **friction** sound disappears. The **apex** rises, and this is followed by a weakening, or entire **absence of the apex beat.** Cardiac **dullness** is broader at the base. It assumes a rude triangular area, with the base downwards, extending to the fourth intercostal space on the right side, and further than normal to the left. **Cardiac Murmur** is weak, and may be lost. A **prominence** over the heart is observed. The **Fever** continues. The **Pulse** is rapid, soft and weak. The **Breathing** is disordered, and frequently we have Orthopnœa. The **vessels of the neck** are distended. The short, dry **cough** continues, and there is a **feeling of weight,** distress, and frequently pain over the chest. The **lungs** may be secondarily engorged. The *Effusion* may consist of serum and lymph; or there may be pus from the commencement; or, again, the serum may become purulent.

Terminations. 1. The serum may be absorbed, the lymph organizing. 2. The condition may become chronic; or 3. May result fatally from cardiac obstruction or failure.

Chronic Pericarditis. Causes. 1. It may follow an **acute case.** 2. It may be **chronic** from the start, especially when there is a large amount of lymph present; also, when the Effusion is purulent, owing to a depraved condition of the person, or when there is a latent condition, as in pleuritis. 3. The occurrence of acute attacks.

Symptoms are—1. **Fever,** often hectic in character. 2. The **Pulse** is rapid, soft and weak, especially in acute cases; but it may be less rapid than, or even, normal. 3. There is **Orthopnœa.** 4. **Cough** continues. 5. **Expectoration** may result from secondary Pulmonary congestion. 6. **Pain,** or, at least, distress about the heart. 7. The **strength fails,** and the patient is weak. 8. The **physical signs** continue the same. In favorable cases, there is left an adherent pericardium. The adhesions may be partial or complete, either soft and cartilaginous or calcareous.

Symptoms of Adherent Pericardium. The heart's action is frequent and easily disturbed. The breathing is sympathetically altered. There is a vague feeling of pain and soreness about the heart.

Physical Signs. 1. The area of **dullness** may or may not be increased. 2. The cardiac **impulse** is extended, weak and wavy. 3. There may be a **retraction** of the intercostal space over the apex beat. 4. **Fremitus**

Pneumo-Pericarditis produced [illegible]
tympanic resonance on percussion

Diseases of the Heart.

Pericarditis

The pericardium is subject to | I Inflam; acute chronic
II Effusions
III Gaseous Accumulation in Pericardium
IV Growths

Acute | diffused
circumscribed

Causes I Cold

II Extension of Inflam from | I Pleura
II Heart itself

III Wounds | Punctured
contused
from fractures

IV Rheumatism
V Brights disease
VI Septic diseases

Symptoms
I Pain & tenderness at region of heart.
II Fever with rapid pulse.
III Short dry cough
IV Friction sound over heart which keeps time with the heart. is superficial & continues when patient holds his breath.
V No change in area of dullness.
VI An absence of pulmonary symptoms.

When Effusion takes place
I Friction sound disappears
II apex rises (may be absence of apex beat)
III Cardiac dullness increased at base
IV " murmurs is weak & may be lost.
V a prominence of heart in chest [illegible]
VI Fever continues & pulse is rapid, soft & weak.
VII Breathing disordered - may [illegible] short of breath,
VIII Vessels of neck are distended.
IX Short dry cough, & feeling of weight, & pain.
X The effusion may consist of serum & lymph or may be pus.

Terminations - I Serum may be absorbed.
II Lymph organizes.
III may become chronic
IV " have cardiac obstruction or failure

Chronic Pericarditis

Causes - I May follow an acute case II May be chronic from start.
Symptoms I Fever often hectic V Expectoration, from secondary pulm. congestion.
II Pulse rapid, soft & weak VI Pain
III There is short of breath
IV Cough continues.

Symptoms of Adherent Pericardium.
I Heart's action disturbed
II Breathing altered
III Sense of pain & soreness about the heart.

Physical signs I Area of dullness is increased
II Cardiac impulse extended
III Retraction of intercostal spaces [illegible] beat
IV Fremitus [illegible] thrill sometimes felt,
V Absence of valvular troubles,
VI Myocarditis may result from Pericarditis
VII Amt of fluid may be great.

Diagnosis - From Pleurisy. pain is different + friction sound is not cardiac in time

Prognosis - of acute is favorable. of chronic anxious

Treatment -

of acute I. Absolute Rest + strict diet IV Depletion thro bowels
II Blisters of pericardia in 2nd stage
III Calomel, opium, digitalis

Chronic
I Rest with K Iodide + Digitalis
II. Surgical - Puncture in 5th intercostal space

Chronic with Effusion.
I Rest + strict diet
II Blistering + Jaborandi
III K. Iodide + alkaline treatment
IV Calomel, Squills, Digitalis
V Puncture at lower border of 5th inter-

Hypertrophy of the heart.
I Simple - walls thickened + cavities normal
II Eccentric - hypertrophy with dilatation, walls thickened + cavities enlarged
III Concentric - walls thickened + cavities contracted

Dilatation is enlargement of the cavities of the heart with thinning of the walls
The right ventricle is more often subject to simple dilatation +
" left " " " " " " eccentric hypertrophy
Appearance of Cardiac Muscle in dilatation is pale or yellow + become soft + subject to fatty degeneration.

Causes I Excessive exertion
II obstruction
III alterations of capillary walls
IV Cirrhosis of various organs

Symptoms
Simple Hypertrophy
I overaction of the heart
II Pulse becomes large + strong.
III Arteries of neck may throb on exertion,
IV 1st heart sound is prolonged + dull
V 2 " " " marked

[illegible] I Area extended [illegible]
II Increase in Cardiac dullness
III Sense of weight in chest + Dyspnoea
IV Palpitation on exertion
V Face pale + at times cyanosed
VI 1st sound is feeble
Murmurs are apt to develope
VII Pulse weak + compressible
VIII Congestion + dropsy

and thrill are sometimes felt. 5. The heart **sounds** may be normal or weakened. 6. **Friction sound** is usually wanting. 7. We notice the **absence of valvular trouble**, the existence of which would account for these symptoms. Myocarditis may result from Pericarditis. The amount of fluid may be a quart. The presence of four to six ounces of clear serum with a normal pericardium is not pathological. If the Effusion is large it is likely to be purulent.

The **Diagnosis** consists in recognizing—1. The existence of the condition. 2. The Character and extent of the Effusion. In *Pleurisy* the pain is different and the friction sound is not cardiac in rhythm. By an exocardial friction sound we understand a pleuritic friction of cardiac rhythm. We have a pleurisy of the inner side of the lung against which the heart rubs.

As to the **Character of the Effusion**, we are guided by—1. Cause and duration. 2. The variety of the symptoms. 3. The result of exploratory puncture.

The **Prognosis** of *Acute* is generally favorable, of *Chronic* grave, and of *Adherent* pericardium uncertain. It is not usually grave, but when the heart itself is involved, it may be so.

Treatment. 1. Of the **Acute** Stage. Enforce Absolute rest and strict diet. Apply a blister over the præcordia, moderate in size and action. Give Calomel, Opium and Digitalis in doses varying with the severity of the case and age of the patient, together with quinine in full doses. 2. **After** the Acute stage keep the patient quiet in bed for a long time, and give Iodide of Potassium and Digitalis. 3. Of **Chronic Pericarditis** with Effusion. If the effusion is serous and not of great extent insist on rigid hygiene and strict diet. Order repeated blisterings and jaborandi. Put the patient on the use of Potassium Iodide and Alkaline treatment. Calomel, Squill and Digitalis may also be given. If the Effusion is extensive and is dangerous to life, or if it has lasted a long time and the symptoms point to its being purulent, the case becomes one for operation. This is performed either by incision or puncture at the lower border of the fifth rib. We should first make an exploratory puncture with a small needle, and then use the aspirator. If Pus is found the opening should be enlarged, and where it is offensive the sack should be washed out. The sack should then be closed up with the exception of a small hole. Where the sack is very large it may sometimes be necessary to resect a portion of a rib, in order to allow of adequate pressure being made upon it.

(For Pneumothorax, see Diseases of the Respiratory System, Part II.)

Hypertrophy of the Heart may be considered under the three forms: *Simple*, *Eccentric* and *Concentric*. In **Simple** the walls are thickened, while the cavities remain normal. In **Eccentric**, or hypertrophy with Dilatation, the walls are thickened and the cavities are enlarged. **Concentric** does exist, but is so rare that it may, practically, be disregarded. In this form the walls are thick and the cavities contracted.

By **Dilatation** of the heart we understand an enlargement of the cavities with a thinning of their walls. The right ventricle is more often subject to simple dilatation, while the left is more frequently liable to eccentric hypertrophy.

Appearance of the Cardiac Muscle: Where dilatation is excessive or has lasted a long time the color of the muscle is pale, or is tinged with yellow. The muscles finally become soft and subject to fatty Degeneration.

Causes of Hypertrophy are—1. Prolonged and excessive **exertion.** 2. **Obstructions** to the circulation at a distance from the heart, thus giving rise to affections of the valves. 3. **Atheroma** and Fibrosis of the Capillary Walls. 3. **Cirrhosis** of various organs.

Symptoms of Simple Hypertrophy—1. **Overaction** of the heart. The impulse is too strong and more extended than normal. There is a throbbing at the præcordia and throughout the system. 2. The **Pulse** is tense, large and strong. It may be normal or accelerated. 3. Exertion causes the **arteries of the neck to throb**. There is a disposition to a **flow of blood** to the head and to nose bleed. The **Complexion** is florid and **Dyspnœa** follows exertion. The **first sound** of the heart is prolonged and dull, while the **second** is accentuated.

The **Prognosis** is good at first, but the heart finally becomes weak, and then we have the following symptoms: 1. An **extended heaving impulse** and an **increase in** the area of **cardiac dullness**. 2. There is a **sense of weight** about the chest, and **dyspnœa** is usual. **Palpitation** follows any exertion, and the patient is soon tired out. The **face** becomes pale and the **extremities** are easily cyanosed. The **first** sound is feeble, and **murmurs** are apt to develop. The **pulse** is large and compressible, but not strong. Progressive failure of the heart's power is shown by **congestions** and **dropsy.**

In **Eccentric Dilatation** we have a failure of the circulation and pallor of the surface of the body, with a tendency to venous congestion, lungs, and extremities, producing dropsy. Palpitation and dyspnœa are readily excited and there is a feeling of distress about the præcordia. The pulse is small and rapid.

Physical Signs. The præcordia is prominent and apex impulse expanded. Normally, it is one inch in diameter, but may be expanded over the whole præcordia, and its pulsation be visible over the abdomen. The apex beat, if the left cavities share in the involvement, is displaced downward and to the left. If the right cavities alone are affected, it is displaced to the right. In simple hypertrophy, the impulse of the heart is hard, but where there is dilatation we feel a wavy undulating tremor.

Percussion reveals an increased area of cardiac dullness.

Auscultation. In simple hypertrophy the first sound is prolonged and heavy, the second is accentuated. In simple dilatation the first is heavy and booming, and the second is accentuated. Where, however, there is much dilatation, the first sound is short and sharp, somewhat like the normal; while the second sound remains unchanged.

Diagnosis. In both pericardial effusion and dilatation the præcordia is prominent and the area of dullness is increased; but in effusion the apex is raised and its impulse weak or absent; while in dilatation it is found at the lowest point of dullness, and its impulse is extended and heaving. Again, in pericardial effusion the heart sounds are normal, but are obscure and heard high up; whereas in hypertrophy they are low down and abnormal.

The **Prognosis** depends upon—1. The relation of dilatation and hypertrophy. 2. The condition of the valves. 3. The co-existence, or otherwise, of chronic renal disease.

Treatment is carried out chiefly by attention to regimen and diet, and to the regulation of the habits. 1. In *simple hypertrophy*, uncomplicated by renal disease, a restrictive diet is necessary, and the patient carefully guarded against over-exertion and excitement. With this we combine the prolonged use of Aconite and Bromide of Potassium. If co-existent with this we have a rheumatic diathesis, long courses of Lithium and Potassium Iodide are further indicated. 2. In *Marked Eccentric Hypertrophy*, *i. e.*, hypertrophy with dilatation, still more care is needed with reference to the habits and [illegible] Dilatation

I Failure of circulation hence pallor of body & venous congestion
II Dropsy
III Palpitation & dyspnoea easily produced
IV Pulse [illegible] & rapid
V Dullness increased on percussion

Auscultation -
In simple hypertrophy
1st sound prolonged & 2nd marked
In simple dilatation
1st sound heavy & booming & 2nd [illegible]
In much dilatation
1st sound short & sharp nearly like normal & 2nd [illegible]

Treatment
In simple hypertrophy - Regulate diet & guard against exertion
with [illegible] of K Bromide
In hypertrophy with dilatation - same as simple with care to circulation
with Digitalis & Strychnine
Same in extreme dilatation

Fatty degeneration - may attack an hypertrophied or normal heart.
Causes - I Failure of nutrition
II Nervous strain & excessive exertion
III Disease of Coronary Arteries
IV Alcoholism [illegible]
Symptoms -
1 Exertion produces dyspnoea
2 Surface of body is pale
3 Pulse is [illegible], soft & feeble
4 1st heart sound weak & failing
5 Cardiac impulse feeble
6 Tendency to syncope & pulmonary congestion
7 Oedema of the feet in later stages
8 Kidney affection
9 Arcus Senilis
Prognosis - Unfavorable - Sudden death oft occurs
Treatment - I Strict Diet - no exertions. Muscular & Cardiac Tonics

Angina Pectoris - paroxysms of pain in cardiac region
May occur - 1 In hysteria
" gastralgia
" organic trouble in [illegible]
" from the use of tobacco, coffee &c
Symptoms -
I Paroxysm comes on abruptly
II Breathing interrupted
III Pulse [illegible]
IV Pulse weak & soft
Causes - I Digestive disturbances in persons with heart disease
II Excitement or over exertion, [illegible]
III [illegible]

another form of Anginoid Pain may arise in connection — neuralgia of the cardiac plexus,

Causes — I atheroma of coronary arteries
II Vascular disease
changes in the walls of the heart

Treatment of all forms
I Study cause of attacks
II Rest in bed when caused by exertion
III Arsenic, with Quinine & Strychnine
IV For gouty patients. K I. & Lithium.
V Patients should carry a bottle Amyl Nitrite with them,
VI Counter irritation

Palpitation — a functional condition of the heart, brought about by irritation of the cardiac nerves & leading to irregular action

Causes — I Exhaustion. Fright &c
II Reflex irritation whether sexual or stomachic.
III Use of tobacco tea & coffee in excess.

Symptoms — I Distress about the praecordia
Sensations of weakness, giddiness &c

Physical Signs — I action of heart & pulse strong & irregular
II apex beat diffused
III Heart sounds "

Treatment I Remove cause
II Bromides, Digitalis, Belladonna, Hydrocyanic Acid, Aconite &c
III Rest

Endocarditis { acute — Simple. Rheumatic & Septic
chronic — Secondary or Ulcerative

Anatomical Conditions —
In the acute stage
I Congestion & cloudy swelling of the membrane with roughness
chronic — I Vegetations causing thickening & opacity
I obstruction of the orifices
II Insufficiency of the valves
III Roughening " " "

Causes
Acute — I Idiopathic
II May occur during acute diseases as Rheumatism Scarlet fever, Diphtheria, Measles &c
III May occur from septic or pyaemic processes.
chronic I From an acute
II Gouty diathesis

Symptoms
acute I Rise of temp.
II Rapid Pulse
III " Heart
IV Soft [illegible] murmur — mitral systolic murmur
V Orthopnoea
Course — of 3 to 5 days
Treatment — 1 Rest
2 Counter irritation
3 K. Iodide & Digitalis.

Ulcerative Endocarditis — inflammation of endocardium [illegible] produced by [illegible]
Causes — Septic material
Symptoms — of an exaggerated acute type.
Onset [illegible] & [illegible]
Kidneys, [illegible]
Prognosis — fatal.

diet. Special attention must be paid to all the secretions of the body, and the slightest tendency to congestion removed. When the heart power begins to fail, cardiac sedatives become less useful, and digitalis is indicated. To give tone to the system put the patient on prolonged courses of strychnia and arsenic. Rheumatism and Bright's Disease must be treated when they arise. 3. The treatment in *Extreme Dilatation* is merely palliative. There is a tendency to congestion of the stomach and liver, hence Digitalis and Strychnia may be given. Where the distress is excessive we are compelled to have recourse to opium, either in the form of suppositories or hypodermic injections.

Fatty Degeneration may attack either an hypertrophied or a normal heart. We must distinguish between the envelopment of the heart by a fatty deposit, which is usually a part of Polysarca (*i. e.*, a tendency to the deposit of fat), or fatty infiltration; and fatty Degeneration, in which we have a true degeneration of the heart muscle. When it comes on as a primary disease it is hard to recognize.

Causes are—1. Profound **failure of nutrition.** 2. Nervous **strain.** 3. Excessive **exertion.** 4. Disease of the **coronary arteries**; and 5. **Alcoholic** excesses.

Symptoms. Exertion induces **dyspnœa,** which may resemble spells of Asthma. The patient becomes **dizzy** on suddenly changing his position. The **surface** of the body and face are **pale.** On examination the **pulse** is found to be small, soft and feeble. It is extremely weak and easily affected by exertion. It may be either abnormally slow or fast. The **first sound** of the heart is weak and fading, and the cardiac **impulse** extremely feeble. There is a tendency to **syncope** and pulmonary **congestion.** As the disease progresses **Œdema** of the feet, and finally general dropsy ensue. The **kidneys** are also affected. The appearance of fatty degeneration in the layers of the cornea is frequent and gives rise to the condition of the eye known as "**Arcus Senilis.**"

The **Prognosis** is always unfavorable, although the disease may last from one to several years, patients being frequently confined constantly to their chair. Sudden death is apt to follow on exertion.

The **Diagnosis,** if there has been hypertrophy, is made by the occurrence of heart failure. If the heart has been otherwise normal, the occurrence of cardiac weakness without any apparent cause to account for it, the presence of "Arcus Senilis," and the history of a probable cause, should make us think of fatty degeneration. It is not wise to mention fatty heart to patients until the disease has advanced so far that it is absolutely necessary to tell them. The symptoms may arise from temporary nerve or muscular weakness. We should remember that the diagnosis is based upon reasoning, and not upon physical signs. Hence as physicians we should be cautious about expressing our opinion.

The **Treatment** is merely palliative. Strict attention must be paid to the diet and regimen. The greatest caution must be observed in making any exertion. In the way of drugs we need muscular and cardiac tonics, and alcoholic or diffusible stimulants in small and weak doses.

Angina Pectoris. This is an affection *characterized by paroxysms of pain in the cardiac region, which usually extend into the left arm, and are attended with a feeling of impending death,* and in which sudden death does sometimes ensue. **Anginoid Pains** may occur—1. In Hysteria. 2. As a part of Gastralgia. 3. From heart strain in gouty or neuralgic persons. 4. From ovarian trouble in nervous women; and 5. From the use of tobacco, coffee, etc. These pains, however, are more radiating and last longer than those of true Angina. They are not so intense, and are more directly connected with the palpable cause. They do not usually pass down the left arm and cause numbness, nor do they bring about the horrible feeling of impending death which is characteristic of Angina.

True Angina. The paroxysm comes on abruptly, it may be during sleep, with an agonizing pain about the præcordia, which extends under the sternum and down the left arm, causing numbness and tingling and an inability to move the arm. The breathing is imperfect, the pupils dilated, the surface and face cold and pale. Patients clutch at the heart, fall back, and are unable to speak. The pulse is found to be weak and soft, and a difference is observed between the right and left radials. An attack may last from one second to several minutes, leaving the patient weak or dead. Patients commonly die in the first attack.

Causes. 1. Digestive disturbances in a person with heart disease. 2. Excitement, over-exertion and exhaustion. 3. The use of tobacco.

Another Form of **Anginoid Pain** arises in connection with a neuralgia of the cardiac plexus. It is undecided whether this is accompanied by a spasm or paralysis of the heart muscle. The latter is probably the most usual. The sense of constriction would seem to point to spasm; but on post-mortem examination, the heart is usually found to be *dilated*. The pains are induced by exertion. They grow in intensity, and extend in the same direction as those in the true form. Patients may have these attacks without exertion. They generally run into true Angina.

Causes are—1. Atheroma of the coronary arteries, preventing the heart from getting a full supply of nourishment. 2. Valvular diseases, *e. g.*, lesions of the aortic walls and valves. 3. Changes in the walls of the heart. These are *Mechanical*. There are also *Functional* causes.

Prognosis, when due to functional causes, is good. When organic disease is at the bottom, it is bad. When it is accompanied with the appearance of "Arcus senilis," it is always fatal.

The **Treatment.** We must study the character of the patient, of the attacks, and of the cause. When it arises from over-exertion, prolonged rest in bed for a couple of months is often attended with good results. As remedies to prevent the spells, long courses of Arsenic, with or without Quinine and Strychnia, are useful. If the patient is anæmic, Iron must be added. For Gouty patients, Iodide of Potassium and Lithia are indicated. Valerian and the Bromides are not so good as Nitro-glycerine and Nitrite of Amyl given continuously. Patients should carry Nitrite of Amyl always with them in five-drop bottles with rubber corks; and this should be waved in front of the nose when a spell come on. This may break up the tendency to other attacks. When taken often, however, it loses its effects. Counter irritation may be applied at short intervals over the præcordia by means of blisters or the actual cautery. Particular attention must be paid to diet.

Palpitation is a functional condition of the heart, brought about by irritation of the cardiac nerves, leading to irregular action.

Causes. 1. All wearying anxieties and exhaustions. 2. Exciting occupations, frights, etc. 3. Reflex irritation, whether sexual or stomachic. 4. Causes which induce anæmia, particularly in nervous subjects. 5. The use of substances which directly affect the heart, *e. g.*, tobacco, tea, and coffee in excess.

Symptoms. There is distress about the præcordia, greater than that which those suffering from organic disease experience. There are sensations of weakness, giddiness, etc., and excessive hypochondriasis.

Embolism - rare. brought about by detachment of vegetations from the valves [illegible] endocarditis

Symptoms - those of [illegible]

Prognosis - bad -

Treatment for Ulcerative Endocarditis & Embolism is supporting

Chronic Endocarditis Synonymous with organic heart disease & valvular disease

Location - But one valve may be affected or all three the mitral valve is the most freq affected.

In the order of frequency we find
I Mitral regurgitation
II aortic stenosis & insufficiency
III Mitral "
IV Tricuspid regurgitation
V Pulmonary artery may be affected

Symptoms - General & Local
General I Disordered action
II the rhythm is changed
III Pain [illegible] from the heart
IV [illegible] face is prominent & [illegible] capillaries injected extremities are blue
V [illegible] often [illegible]
VI Spleen enlarged & [illegible]
VII Dropsy in the feet

Physical Signs of the Various Lesions
Mitral Regurgitation - A systolic murmur over the mitral [illegible]
Mitral Stenosis - A pre systolic murmur over the [illegible] murmur [illegible] & carried [illegible]
Aortic Regurgitation - a diastolic murmur [illegible] It carried up along the aorta into the carotid artery.
Aortic Stenosis - a systolic murmur over the same area
Tricuspid Regurgitation a systolic murmur heard over the right ventricle [illegible] the epigastrium & [illegible] the right of the sternum.
Tricuspid Stenosis is very rare
Mitral Regurgitation is connected with [illegible]
" Stenosis with great enlargement & hypertrophy of left auricle
Aortic Regurgitation & stenosis with [illegible] hypertrophy
Signs of Tricuspid Regurgitation we find
I Marked [illegible] right ventricle (Dilatation & hypertrophy)
II Pulsation of veins of neck
Pul [illegible] Stenosis is rare & is generally congenital
Lips & extremities blue - fingers clubbed.

Complications of [illegible]

I Dropsy [illegible] due to [illegible]
II Hemorrhage commonly bronchial [illegible]
III Paralysis

Treatment
I Rest is absolutely necessary.
II Digitalis to regulate, slow, & strengthen the heart.
III Belladonna where the heart's action is irregular.
IV Aconite & Veratrum Viride in simple hypertrophy

Diseases of the Great Vessels.
The arteries are subject to
I Inflammation or Arteritis
II Degeneration or atheroma
III Aneurism
IV Narrowing or occlusion

Aneurism may arise from
I Injury to coats of vessels.
II syphilis
III chronic atheroma [illegible]

Terminations
I Rupture
II Healing by clotting

Thoracic Aneurism
Symptoms - 1 Deglutition is impaired
2 a pulsating tumor or a thrill
3 Dullness on percussion
4 An aneurismal murmur may be heard
5 Bulging of the ribs

Exophthalmic Goitre
Causes - Depressing influences & irritation
Symp - I May have palpitation of the heart.
Protrusion of the eyes,
Thyroid enlargement,
Appetite poor & digestion weak
Treatment I Remove cause
II Regulate diet
III Digitalis to control heart
IV Ergot. Iodide of K.

Plethora is an undue increase in the total quantity of blood
Causes - Excessive ingestion of highly nourishing food
Symptoms I fullness in head IV a tendency to congestion of liver & to hemorrhoids
II Increased color
III heart's action heavy & labored V Urine high sp gr.
Treatment - attention to diet
Saline & mineral waters

naemia - a condition in which the normal composition and
quantity of blood suffers
Varieties
I Simple
II Toxic
III those associated with organic disease
IV Idiopathic {a- progressive
or Pernicious {b- pseudoleucaemia
{c- leucaemia

Simple Anaemia - a deficiency in amt of blood + diminution in
no of red blood corps.
Normally 1 cubic millimeter of blood contains 5 millions
of [illegible] blood corps. the proportion of white to
red being 1 to 4.00
Causes -
1 Want of proper food & sleep.
2 Excessive discharges
3 Follows fevers, inflammation &c
4 overwork,
5 Impure air &c
Symptoms
1 Skin bloodless
2 Eyes & nails pearly white
3 heart weak,
4 Digestive system weak,
5 Urine pale & low sp. gr.
6 Soft blowing systolic murmur of heart
Treatment
1 Remove cause
2 Improve the hygiene
3 Tonics, Meat, Mineral acids, Pepsin &c
Iron, Arsenic, Cod liver oil

II Toxic Anaemia may be Malarial or Metallic.
Symptoms same as simple &c
Causes - the poisons
Treatment remove cause &c

III Anaemia associated with Organic Diseases
1 Cancer of stomach + Intestinal Cancer
2 cirrhosis of liver
3 Bright's disease

IV Idiopathic Anaemia is associated with changes in
(or Pernicious Anaemia) the blood-making organs i.e.
Spleen, lymph glands &c
~~Leucaemia abnormal increase in white blood corps.~~
~~Pernicious Anaemia~~ ~~[illegible] red~~
Symptoms - 1 Patient pale
2 Shortness of breath
3 Hemorrhages occur
4 [illegible]
[illegible]
[illegible]
Prognosis - bad.
Treatment - palliative

~~Frequency of anaemia in [illegible] which is fatal~~

Chlorosis - an anaemia found often in young girls between 14 & 24 yrs
Symptoms. 1 Face becomes greenish
2 Conjunctiva is pearly white (so distinguished from jaundice)
3 [illegible] red
4 Feeling of fatigue
5 Disordered Digestion
6 Disordered sleep
Prognosis - is good
Treatment - 1 attend to diet & hygiene
2 Remove cause
3 Give iron & dilute phosphoric acid & Strychnine

Leucocythemia or Leukaemia is a chronic disease with increase in no of white corps which is permanent
a temporary increase is called Leucocytosis.

3 Kinds | Splenic
| Lymphatic
| Medullary
Symptoms - Enlargement of Spleen
Swelling of glands of neck groin &c
Dyspnoea
Dropsy
hearts action is increased
Liability to hemorrhage
Prognosis - is grave
Treatment - Give tonics &c

Pseudo-Leucocythaemia or Hodgkins disease - a condition in which the same anatomical lesions are present as in Leucocythaemia but no increase in no of white corps.
Symps & Prog. & treatment same as Leucocythaemia

Addisons Disease - a disease of the Suprarenal capsules with a peculiar discoloration of the skin & with the development of fatal asthenia

Physical Signs. The action of the heart and pulse is strong, but both are irregular. The apex beat is diffused. This irregularity may be continuous or in paroxysms. The number of beats may be as high as 250, or the pulse may be intermittent. The Heart Sounds are confused. The first sound is less muscular and more valve-like, or there may be a functional murmur which disappears after the paroxysm.

Diagnosis. There is no difficulty in distinguishing it from organic disease, except in those rare cases where a murmur exists. The heart must be examined several times during the day and when the patient is most tranquil. We base our diagnosis on the absence of disturbances of circulation and respiration, and of cardiac enlargement, and also on the history of the case.

Treatment. The cause must be discovered and removed, *e. g.*, rapid eating, or improper mastication of the food. The excessive use of tobacco, tea, coffee, etc., must be prohibited, and any cause of reflex irritation removed. Moral suasion plays a very important part. If no good effects follow the above, we may try the use of Bromides, with or without Digitalis, or Belladonna, Hydrocyanic acid, and Aconite according as they are well borne and do good. Courses of Iron, Arsenic, Quinina, and the Hypophosphites are often serviceable. This Treatment includes that of Irritable heart which is produced by excessive strain and is often found in recruits, athletics, etc.

Endocarditis is Acute and Chronic. Under the head of *Acute* we consider Simple, Rheumatic and Septic. *Chronic* Endocarditis may be Secondary or Ulcerative.

Anatomical Conditions. In the acute stage we find a congestion and a cloudy swelling of the membrane, with slight roughness, followed by a proliferation with the formation of nodules. Instead of the vegetations being on the surface, they may be under the membrane, and give rise to thickening and opacities. As the result of these processes we find—1. Obstructing of the orifices. 2. Insufficiency of the valves; or 3. They may be only roughened.

Causes of Endocarditis. I. **Acute.** It may be—1. Idiopathic; or 2. Occur in the course of acute diseases, *e. g.*, Rheumatism, Scarlet Fever, Diphtheria, Measles and Small Pox. 3. It may be set up by septic or by pyæmic processes.

II. **Chronic Endocarditis**—1. As a rule follows the acute. 2. It may be sub-acute or chronic from the start, especially in those of a gouty diathesis. 3. It may be produced by changes of an atheromatous nature.

I. **Symptoms of Acute Endocarditis.** 1. Ordinary Endocarditis usually occurs in the course of some acute disease. Idiopathic cases are rare. We have a rise of temperature which cannot be explained on any other ground. The Pulse is rapid and there is pain and tenderness over the heart. The murmur is soft and not very intense or extended. If the attack is severe we may have a disturbance of breathing, sometimes amounting to orthopnœa. When it comes on in health its onset is marked by rigor, fever, etc., and the same physical signs as above.

The **Course** is uncertain, generally from seven to ten days, but there is a great tendency to become chronic, the overaction of the heart and the murmur continuing after the other symptoms have disappeared.

Prognosis, if it is recognized and treated, is good for immediate recovery, but bad as regards a permanent cure.

The **Diagnosis** is easy, if we think of examining the heart. In young children it is apt to be overlooked.

Treatment. Rigid rest and protection of the body, especially in persons of a gouty diathesis. Counter irritation by means of blisters over the heart from time to time. This, however, must not be attempted in scarlet fever or measles. As drugs, Potassium iodide and Digitalis are required.

2. In **Ulcerative Endocarditis** the valve is softened and ulceration of the endocardium takes place, sometimes followed by perforation.

Causes. It may attack a previously healthy heart, owing to depraved nutrition or to septic causes. It may occur in a diseased heart.

The **Symptoms** are those of severe endocarditis, greatly exaggerated. The fever soon assumes a remittent type. The skin is sallow. The breath emits a sweet or pyæmic odor. A Typhoid condition may ensue. This disease is accompanied by irritation of distant organs. The spleen may become large and tender. The Kidneys show evidences of Bright's Disease. The lungs exhibits spots of inflammation, due to the deposition of particles brought away from the heart.

Prognosis. It is usually fatal. The patient may be carried off within a few weeks or last a couple of months.

Diagnosis. It is important to recognize the ulcerative character of the condition. This is done, not by the physical, but by the constitutional signs, and by the failure of our treatment to bring about a good result.

Embolism is rare, but may be brought about by the detachment of little particles of vegetations from the valves. These set up metastatic abscesses elsewhere, the symptoms being those of ulcerative endocarditis.

Treatment should be supporting and symptomatic.

Prognosis is very bad, unless the patient has a rugged constitution and can withstand the drain upon his system, thus set up.

II. **Chronic Endocarditis** is synonomous with organic disease of the heart or valvular disease. Location.—But one valve may be affected or all three. The mitral valve is more frequently attacked. In the order of frequency we find—1. Mitral regurgitation. 2. Aortic stenosis and insufficiency. 3. Mitral stenosis, which may exist alone, but is rare. 4. Tricuspid regurgitation. 5. Lastly, the Pulmonary artery may be affected owing to intra-uterine life.

Symptoms are General and Local. I. **General**: Disordered action is almost universal, but in some cases of severe disease the heart may be regular. The **rhythm** is changed. The irregularity may be in the force of the beats or in the time, or there may be intermissions. At times this irregularity is very great. When the mitral and tricuspid valves are affected, we find a continued irregularity of action. The **pulse** may vary from the heart, there being two or more beats of the ventricle to one pulse-wave. Hence it is important to count both the heart and pulsė. The latter may be described as "jerky," "sledge-hammer," "cut-off." The **arteries** are apt to be atheromatous, and this, in many cases, may lead us to think the pulse is harder than it really is. The **superficial circulation** is affected, the eye is prominent and full, the capillaries injected, and the extremities are blue. **Other organs** are affected. 1. The **Lungs** are often congested. The breathing is accellerated, especially on exertion, and bronchitic rales are heard posteriorly. 2. The **Liver** and **Stomach** suffer. Gastro-hepatic congestion is frequent, and there is often a marked tendency to biliousness. Diarrhœa is frequent, and there is a tendency to formation of hemorrhoids, which often bleed. 3. The effect on the **Kidney** is shown by a tendency to frequent urination and by the presence of albumen in the urine. There is a great liability to nephritis. 4. The **Spleen** is often enlarged and swollen. These conditions become more marked as the propelling power of the heart

decreases. In the last stage **Dropsy** makes its appearance in the feet. This is most marked toward the close of the day. The legs gradually become œdematous as the heart fails, then the scrotum and abdomen, and finally the cavities of the body. The worst cases are those in which the tricuspid and mitral valves are affected.

Physical Signs of the Various Lesions:—

- **Mitral Regurgitation.** A Systolic murmur over the mitral area.
- **Mitral Stenosis.** A pre-systolic murmur over the body of the heart nearer the apex and carried far to the left.
- **Aortic Regurgitation.** A Diastolic murmur starting from the base of the heart and carried up along the aorta into the carotid artery.
- **Aortic Stenosis.** A systolic murmur over the same area.
- **Tricuspid Regurgitation.** A systolic murmur heard over the right ventricle at the epigastrium and low down to the right of the sternum.

Tricuspid Stenosis is so rare that it need not be considered.

Mitral Regurgitation is connected with Simple or Eccentric Hypertrophy and with a dilatation of the left auricle. Mitral Stenosis, with great enlargement and Hypertrophy of the left auricle. Both Aortic Regurgitation and Stenosis give rise to eccentric Hypertrophy.

Diagnosis is made by observing—1. The time when the sound is produced. The radial must be noted at the same time as the heart. 2. The area of dullness, *i. e.*, the effect of the disease on the size of the heart. 3. Whether there is hypertrophy or dilatation. This is shown (a) by the character of the impulse, (b) the force of the beat, and (c) the effect on the general circulation. 4. Notice the direction of the transmission of the sound; and 5. The relation which the murmur bears to the time of the normal heart sounds.

Symptoms of Tricuspid Regurgitation. We find—1. Marked changes in the right ventricle, Dilatation, and perhaps Hypertrophy. 2. Pulsation of the veins of the neck from meeting with the blood from the descending vena cava. 3. Pulsation of the liver from the shock caused by the meeting of the arterial with the blood from the descending vena cava.

Pulmonary Stenosis is very rare. It is generally congenital. The right ventricle after birth being the most active part of the heart, the changes in the arterial system which should take place at birth are interfered with, and cyanosis occurs. This at times is excessive, and great difficulty is experienced in keeping the patient warm. There is a great liability to collapse and pulmonary congestion. Patients rarely attain to adult life. Most frequently death occurs soon after birth. Where life is unfortunately prolonged, such patients are puny, ill-nourished and weak. The lips and extremities are purple, the fingers clubbed. In such cases we find a systolic murmur originating at the base of the heart and carried upwards to the left along the pulmonary artery. It is irregular as to its area, frequency, etc., and we make our diagnosis by the more evident general symptoms.

Complications of Chronic Valvular Disease.

I. **Dropsy** is common, and is due to the extreme venous congestion. It may appear in the chest before it occurs elsewhere, this being due to some local cause, as the pressure of an enlarged heart upon an Azygos vein.

II. **Hemorrhage**, which is most commonly Bronchial. It is chiefly found in Mitral Obstruction. As **Results of Hemorrhage**, we may have *Pulmonary infarction* or Thrombosis. *Epistaxis* is often frequent, and may be almost uncontrollable. *Bleeding Piles* are not rare. *Apoplexy* may occur.

III. **Paralysis** may result from vegetations of the valves being carried off as emboli.

IV. As the result of Cardiac disease, Embolism may give rise to **Gangrene.**

Prognosis. A double valvular lesion is more unfavorable than a single one. The occurrence of Dilatation in place of, or out of proportion to, the Hypertrophy is bad. When it develops rapidly, and the heart does not respond quickly, it is a bad sign. The existence of rigid arteries, "Arcus Senilis," or previous ill nutrition, renders the prognosis unfavorable. In persons of strongly rheumatic diathesis, or where a complication of Kidney affections exist, it is bad.

Treatment. I. General Principles. Rest is absolutely necessary in order to reduce the strain upon the heart. It is not wise to endeavor to bring up the heart to the full work of the system; but we should rather endeavor to bring the amount of work within the power of the heart. If possible, the patient should lie down for a greater part of the twenty-four hours. All strains upon the arterial system must be avoided, such as those caused—1. By going up hill or up stairs. 2. By the contraction of the capillaries of the surface, as the result of chills; or, 3. By the congestions of internal organs, etc.

II. **Medicines:** Digitalis, Belladonna, Convallaria, the Bromides, Aconite and Veratrum Viride will be considered in detail, the latter being less frequently indicated than in the acute.

1. **Digitalis** regulates, slows and strengthens the heart. No injurious effects result from its accumulation. It does not rapidly lose its effects, and it may be used for years. The best preparation is the tincture. A good infusion is reliable, but inconvenient to administer. Digitalin is often a convenient form of administration. We should begin with small doses, as it sometimes irritates the stomach. When this is the case abandon its use or change the form of administration.

2. **Belladonna** is good where the action of the heart is irregular and rapid from some reflex cause, *e. g.*, the stomach. It does not increase the heart's force.

3. **Convallaria** is inferior to Digitalis in range and certainty, and is disagreeable to the taste and to the stomach. It may be used where Digitalis fails, and where there is a tendency to dropsy, as it is a Diuretic. Long courses do no harm. The dose of the fluid extract is gtt v-vii ter die.

4. The **Bromides** are useful where there is irritation, irregularity, and excitement, but where there is little or no organic lesion. They must not be pushed for too long a time, as they lower digestion and the tone of the system.

5. **Aconite**; and, 6. **Veratrum Viride**, are indicated where there is simple hypertrophy which is too great for the lesion of the valves. Small doses may be given, extending over a long period of time.

Treatment of Special Symptoms. For **Dyspepsia** and **Kidney trouble** improve the general health by tonics, vegetable bitters, and iron. Where the **stomach** is irritable, hydrocyanic acid, bismuth, and Argentic Nitrate lessen the irritability of the stomach and consequently of the heart. In **venous congestion** of the liver, especially with œdema, restrict the diet and give small doses of blue mass, together with the use of mineral acids. In cases associated with **Rheumatism** order prolonged courses of Potassium Iodide and Alkalies in small doses. **Cardiac Dropsy** indicates that the

heart is weak or that some organ is obstructed. Enjoin rest in bed and study the cause.

Diseases of the Great Vessels. The arteries are subject to—1. Inflammation or Arteritis. 2. Degeneration or Atheroma. 3. Aneurism. 4. Narrowing or Occlusion.

Aneurism may arise from—1. An injury to the coats of the vessels. 2. Previous syphilitic Arteritis. 3. Chronic Atheroma forming an atheromatous ulcer.

Termination. 1. It ruptures either from chafing against some hard substance, or its walls may become so attenuated that it bursts from blood pressure. 2. It heals by clotting, owing to the coagulation caused by the slowing of the current from pressure.

Thoracic Aneurism. Symptoms. Deglutition is impaired. A pulsating tumor, or a thrill is apparent. There is dullness on percussion over the point of contact of the aneurism with the chest wall. An aneurismal murmur may be heard or the heart sounds be changed. There may be a prominence or bulging of the ribs.

Aneurism of Abdominal Aorta. We may often feel the tumor. There is a prominence either anteriorly or posteriorly, but percussion may not show dullness on account of the tympany of the ribs. None of these symptoms may be present if the aneurism be small or deeply situated. This is especially true of small aneurisms in the thorax.

Peculiar Symptoms. There is Pain referred to the spot of pressure, or it may radiate along the nerve pressed upon. If very severe, **Paralysis** may occur, *e. g.*, Aphonia from pressure on the recurrent laryngeal. The **Pupils** may be unequally dilated. If it is situated in the abdomen it may press upon the abdominal sympathetics, and **profuse sweating** of one or both sides be produced, the intestinal secretions being modified. When situated on the abdominal Aorta it seldom presses on anything else than the nerves. Previous to the rupture of these aneurisms, *a valve may be formed* which allows a leakage to take place for some time before the final opening. **Paralysis** may result from the erosion of the spinal cord, or **asphyxia**, or **starvation** from pressure on the Œsophagus.

Prognosis depends on—1. The patient's age. 2. The state of the arteries. 3. The time the condition has existed. 4. The rapidity of its growth. 5. The ability of the patient to carry out the requisite treatment.

Diagnosis from—1. **Aphonia** arising from other causes; and 2. **Œsophageal stricture.** The conditition of the aorta must be carefully studied. 3. In **Aortic valvular disease** the murmur may be the same, and there may be concurrent hypertrophy. We must consider the line of transmission, the point of greatest intensity of the murmur, and dullness in unequal spots. 4. From **other forms of Tumors,** by the pulsation, the murmur's location, and the course of the case, and by the presence of causes of aneurism. Other tumors may pulsate and have a murmur, but this is not transmitted. Put the patient in the "Knee and Elbow position," and the mass, if it is not aneurismal, will not pulsate. There will also be a loss of dullness in the back while the patient is in this position.

Treatment. 1. **Abdominal Aneurisms** are within the reach of Surgical aid. If the tumor is near the bifurcation of the Abdominal Aorta, the application of a tourniquet will slow the current and hasten coagulation. *Internal* treatment in these cases is of little or no use. Ligation of the Abdominal Aorta has met with no success in twenty cases. 2. **Thoracic Aneurisms.** If the Aneurism is in contact with the chest walls and has resisted treatment, we may use Electrolysis, one needle being placed in the sack, and from twelve to twenty-four contacts made. *Absolutely immovable rest* must be enjoined at the same time, for weeks and months, and with this, starvation of the patient within the limits of safety. If there is a history of syphilis, Potassium Iodide should be pushed to its fullest extent. Cardiac Sedatives, Aconite, Veratrum Viride, Hydrocyanic Acid, Bromides and Digitalis, when the accompanying heart trouble demands it, should be used.

Exophthalmic Goitre. We have a neurosis of the ganglia controlling the action of the heart and the great blood-vessels arising from it, particularly the thyroid axis and its branches.

Causes. All depressing influences, Prolonged anxiety, Debauches, Sudden shocks, Too frequent Pregnancies, Exhausting Hemorrhages, Chronic Diarrhœa, Exhausting Uterine disease, Irritation of the Sexual organs.

Symptoms. We have a **palpitation of the heart**, which is difficult to control. **Goitre** and **protrusion of the eyes**, either of which may precede the other, but after a time both exist together. The **Thyroid Enlargement** is often enormous. It varies in size, rapidly increasing and again decreasing. It presents a **feeling of elasticity**, but not fluctuation. The **thyroid arteries** are **tortuous**, enlarged, and throb violently, the superficial veins being very prominent. The tumor is the seat of pulsation and thrill, and a **strong arterial murmur** is heard, more prolonged than that heard over the other vessels. The function of the larynx and pharynx may be interfered with, but the dyspnœa is due rather to the irritation of their muscles than to actual pressure. Protrusion of the eyeball is due to a want of perfect harmony in the ascent and descent of the lid and ball. The **Cornea** is dull, dry, and may be ulcerated. The **globe** of the eye appears sometimes to be very hard.

General Symptoms. Patients are **highly neurotic** and emotional, and there are marked **changes in temperament.** Indeed, they may often seem to be deranged. They are **pale,** weak, and anæmic, and are easily fatigued. The **appetite** is sometimes poor, and may very often be greatly perverted. The **digestion** is weak and the stools ill formed, consist of undigested food, and are too frequent.

The **Course** of the case is prolonged, often lasting many years.

Termination: If no effect is obtained from the use of medicine, dilatation of the heart occurs with congestion of the lungs, dropsy, and death. The symptoms may all disappear under proper treatment, but are liable to return. Undue rapidity of the pulse may remain, together with a slight enlargement of the gland.

Prognosis is generally favorable, except in very long standing cases and where we cannot remove the cause.

Diagnosis. In Uncomplicated Goitres the heart's action is different. The gland does not pulsate, nor does it vary in size, and there is neither thrill nor murmur.

Treatment is largely dietetic and hygienic. The cause must be discovered, and, if possible, removed. Special attention must be given to the dwelling, occupation, and diet. Sometimes an absolute milk diet is best, at others, a carefully regulated and restricted diet of cereals and milk. The nasal and other catarrhs must be treated. Argentic nitrate is very useful in these gastro-intestinal catarrhs. At other times the treatment must be directed to the ovaries. Among drugs Digitalis is very useful to control the heart. Caffein is used where there is a marked emotional condition. Iron should be used in all cases and extensively. It must be given in acceptable

forms, *e. g.*, Tincture of the Chloride, Dialyzed Iron, or Iron by Hydrogen. Iodoform may be given with digitalis or with Iron.

℞ Iodoform,
Iron by Hydrogen, āā gr. i,
M. ft. Pil. No. 1.

Ergot is useful when the condition of the stomach does not contra-indicate it. It is not wise to use more than two remedies at one time.

Plethora is an undue increase in the total quantity of the blood or of its solid ingredients, so that it is either *Qualitative* or *Quantitative*.

Causes are an excessive ingestion of highly nourishing food, combined with a lack of exercise, or it may be brought about by the sudden arrest of habitual discharges, *e. g.*, of the Menses, Bleeding Piles, etc.

Symptoms. The patient has a tendency to **fullness in the head** which is increased by sitting in a close room, stooping, etc. The **color** is heightened, with a tendency to become bluish. The **action of the heart** is heavy and labored. The **Impulse** is strong, and its **Sounds** long and heavy. There is a throbbing and distension of the vessels. The **breathing** is labored, and dyspnœa is easily excited. There is a tendency to **congestion of the liver** and lithæmia. **Hemorrhoids** are apt to form. The **urine** is of too high color and specific gravity. There is a general increase in the adipose tissue of the body.

Prognosis. This condition disposes to Hemorrhage, Apoplexy, Pulmonary Complaints, and Hemorrhoids.

Treatment requires a careful attention to diet and regimen. Scales for determining the weight of the body should be frequently resorted to, to ascertain what articles of diet bring about the desired effect. Drugs, such as salines and mineral waters are required to regulate the secretions and for meeting the indications as they arise.

Anæmias are conditions of the blood in which its normal composition and quantity suffer. There are several varieties: 1. Simple. 2. Toxic. 3. Those which are associated with organic disease. 4. Idiopathic. Under the last we consider—(a) Progressive. (b) Pseudoleucæmia. (c) Leucæmia.

I. In **Simple Anæmia** we have a deficiency in the amount of blood and a diminution in the number of red blood corpuscles, or the red blood corpuscles alone may be diminished. Normally, a cubic millimetre contains five millions of blood corpuscles, the proportion of white to red, being one to four hundred.

Causes of Anæmia are—1. Want of proper food and sleep, the latter being just as important as the diet. The regeneration of red blood corpuscles is much more active during sleep. 2. Excessive discharges, *e. g.*, hemorrhage from the Nose, the Uterus, or from Piles. 3. It frequently follows fevers, inflammations, etc. 4. Anxiety or over-work, and depressing excitement. 5. Impure atmosphere and general mal-hygiene.

Symptoms. The skin and mucous membranes are bloodless. The eyes and the nails assume a white pearly appearance. The heart becomes weak and irritable, and dyspnœa is easily excited by exertion. The sleep is light, disturbed and easily broken. The brain soon becomes tired, and the patient loses the power of concentration. The digestive system is weak, and dyspeptic distress is common after eating. The urine is pale and of low specific gravity, unless the liver or stomach are at the same time out of order, when it may contain urates and lithates. Anæmic patients are very prone to have neuralgia. It is among them that we find the most typical cases of neurasthenia and hysteria. The temperament very frequently undergoes changes, the patient becoming petulant, irritable and nervous.

Physical Examination reveals a soft blowing systolic murmur over the heart, and low continuous musical sounds over the great vessels.

The **Prognosis** is always favorable when we can remove the cause.

The **Treatment** consists in the removal of the cause, whether moral or dietetic, and the improvement of the patient's hygiene and surroundings, plenty of sunshine and fresh air being absolutely necessary. This may be all that is needed. Usually, we must at the same time restore digestion by the use of Bitter Tonics, Pepsin or Pancreatin, Malt and Mineral acids. It may be necessary to cure the gastro-intestinal inflammation before striking at the original disease. Iron, Arsenic and Cod-liver oil are all invaluable.

II. **Toxic Anæmia** may be either Malarial or Metallic.

1. **Malarial** may occur in those who have had malarial fever, or it may appear at first as an anæmia without there having been apparently any previous malaria.

Symptoms. We have a destruction of the red blood corpuscles by the poison. The spleen is enlarged, assuming the form known as "Ague Cake." The liver is apt to suffer, and a granular black pigment is found in the blood. There is a greater tendency in this form to neuralgia. At various times patients exhibit other signs of malarial poisoning.

Diagnosis is made by its occurrence in malarial districts and by our inability to obtain a history of any other cause.

Treatment consists in the persistent use of arsenic and quinine, which, in combination with iron, have a peculiarly marked effect.

2. **Metallic.** Under this head we consider poisoning by copper and lead, that by lead being most common.

We base our **Diagnosis** on—1. History of the occupation, habits, etc., of the patient. 2. The previous occurrence of colic. 3. The presence of a "blue line" on the gums; and 4. The reaction of the skin, when moistened with sweat, to the hydro-sulphuret of Ammonium, black spots of sulphuret of lead being deposited.

III. **Anæmias Associated with Organic Disease.** In incipient Cancer of the stomach, incipient Cirrhosis of the liver, Bright's disease, and Intestinal cancers, we may have anæmia long before the appearance of the usual symptoms.

IV. **Idiopathic Anæmia** is associated with changes in the blood-making organs, viz., the spleen, lymph glands, and lymphoid tissue wherever found throughout the body. We have an abnormal increase in the colorless blood corpuscles, which is known as leucæmia, or a decrease in both, pernicious anæmia. In Leucæmia the blood may look normal, but is more frequently like thin pus, coagulates poorly, and its clots are soft. The red blood corpuscles are pale and poorly developed, and are deficient in number. The colorless blood corpuscles are large and have several nuclei, and their proportion to the red may be increased to one to ten or one to six. Perverted globulins may also be found in the blood. The **Spleen** is firm, heavy, and enlarged. It may be six or more pounds in weight. The pulp is dark and studded with grayish bodies, which are enlarged Malpighian corpuscles. These may run together, forming blocks one-half to one inch in diameter. Lymphoid Tissue elsewhere enlarges. The glands are painless and movable, and the skin over them is not reddened. The lungs, liver, etc., all contain spots of this hypertrophied lymph tissue. The marrow of the long bones, which seems to have the power of elaborating red blood corpuscles, has its normal structure changed in this anæmia. Hence we have the three forms, Splenic, Lymphatic, and Medullary.

Symptoms. We have an apparently causeless, extreme, progressive **anæmia,** the patient often having a **waxy appearance.** At first loss of flesh may not be marked. **Shortness of breath** and **palpitation** of the heart follow exertion. The **mucous membranes** are pale, and the **sclerotic white. Hemorrhages** from the nose, gums, or bowels, or into the retina, are common; this latter causing a dimness of vision. Sometimes excessive **sweating** and **fever** are common. On long standing, **œdema of the feet** and legs comes on. The **lymph glands** are enlarged, and give rise to Lymphadenoma, or Hodgkin's disease. If it is of the *splenic* type, the spleen is enlarged. If *lymphatic,* pain is felt in the seat of the glands, either superficially or deeply placed. Those in the abdomen may be so large as to press upon the aorta and simulate aneurism.

Prognosis. It is always a fatal disease, lasting from six months to six years.

Treatment is merely palliative. The patient goes on from bad to worse, and death occurs from Syncope, Diarrhœa, Asthenia, Hemorrhage, or some intercurrent attack, the most common cause being Epistaxis.

Pseudo-leucæmia begins in the same way as the above, with a progressive failure in health, with a tendency to hemorrhages. The spleen and the gland may or may not be enlarged. If there is no enlargement of the glands, the marrow undergoes changes. At first there is no increase in the colorless blood corpuscles, but towards the last this Pseudo-leucæmia may change to Leucæmia, at which time we do find an increase in the colorless blood corpuscles. In Leucæmia the blood-making glands are irritated and a great abundance of colorless blood corpuscles, which do not develop fully, is produced; and, as the red are destroyed, anæmia results, because the unformed colorless blood corpuscles cannot circulate to advantage.

The **Prognosis** in a fully-developed case, seems to be fatal. The duration may be from a few months to two or three years. In the progressive form life ends in a few months.

Diagnosis. We recognize an intense anæmia without any apparent cause, and, as far as we know, no organic disease of any viscus. If there is no enlargement of liver, spleen, or lymph glands, we should turn our attention to the rarer form of Medullary.

Treatment is merely palliative and symptomatic. The indications are to regulate the diet and relieve pain. Iron, Arsenic, and nutrients act only in a general way, and should not be regarded as specific. Transfusion of blood should be condemned.

Chlorosis is an affection most frequently seen in young girls, but may occur in males also. It is associated often with derangements of the sexual apparatus, especially with menstruation. Hysteria and perverted temperaments are very often associated with it. The face assumes a pale, yellowish, green tinge, almost like a faint trace of jaundice, but is distinguished from it by the appearance of the conjunctiva, which is pearly white. The red blood corpuscles are reduced in number, but the colorless blood corpuscles are not increased. There is some pigmentary alteration in the blood, but it has, so far, eluded chemical test.

Symptoms. At first there may be no loss of flesh. The extremities are cold, and there is a feeling of great fatigue, with a tendency to palpitation on the slightest exertion. The digestion is more markedly disturbed than in ordinary anæmia. The appetite is lost or may be perverted. There is a great tendency to neuralgia. Sleep is disordered, and the patient gradually becomes morbid in temperament. We have here associated a disorder of the mind, digestion, and the menstrual function.

The **Prognosis** is very good, but cases are often obstinate on account of the difficulty of removing the cause.

Treatment consists in attention to diet and hygiene. The exercise of moral influences, such as change of scene, occupation, etc., and the removal of local disorders, such as ovarian, uterine, and prostatic irritation arising from masturbation; and the administration of remedies to restore the condition of the blood. Iron is indicated, but its administration is attended with difficulty owing to the great digestive disturbance. We should endeavor to effect a judicious concealment of the Iron, and persist in its use until we are perfectly assured that it does harm. It may be given with dilute phosphoric acid or in pill-form.

℞ Iron by Hydrogen, and Phosphorus in minute doses.

Strychnia and mineral acids should also be given. All sedatives must be avoided.

IV. DISEASES OF THE SPLEEN.

The **Spleen** is subject to—1. Rupture. 2. Enlargement from Malaria or Chronic congestion. 3. Inflammation of Capsule, or Substance with the formation of abscess. 4. Degeneration. 5. Cancer. 6. Hydalid Cysts. 7. Leucæmia.

1. **Rupture** is usually the result of traumatism, but may be spontaneous in the swollen spleens of Relapsing and Typhoid fevers.

2. **Enlargement,** very common in Typhoid fever, of which it is a characteristic symptom, and also in Relapsing and Typhus fever and Malaria. It is particularly common in chronic Malaria, in which it attains the large form known as "Spleen Cake," or Spleen tumor. It is also common in heart disease. It is recognized by—(a) Percussion and Palpation. (b) By a history of Malaria; or (c) A dull pain in that locality may call our attention to it.

3. **Inflammation** may be limited—(a) To the **Capsule,** when it becomes a local Peritonitis, which is very common in this situation in relapsing fever, less so in Typhoid. Syphilitic and Tuberculous Peritonitis are very apt to be located here.

The **Symptoms** are:—Pain and tenderness, and evidences of enlargement. They are, of course, merged in those of the disease causing it, where there is a history of the fever or of Syphilis.

The **Treatment** would be the same as for any other local peritonitis.

(b) Primary inflammation of the **Substance of the Spleen** is rare. Secondary is more common as the result of Pyæmia, or the lodgment of Emboli, causing an infarct which goes on to organization or suppuration.

4. **Degenerations.** Amyloid is the most common. The spleen becomes very large, and it is associated with amyloid degeneration of the kidney or of the liver.

The **Symptoms** of the degeneration are referred more to the degeneration of the liver or kidney. We should suspect it where there were causes for the disease, or from the disease appearing in the kidney as shown by copious urine and presence of epithelial cells, giving the mahogany-red reaction.

Prognosis is fatal.

Treatment is merely palliative and symptomatic.

Cancer of the Spleen is rarely primary, and is accompanied by a cancerous cachexia. The organ is nodular and not uniformly enlarged, and is the seat of great pain and tenderness.

Nose | Catarrh | Acute
chronic

Acute
Causes - cold in head &c
Symptoms 1 Pain & discomfort &c in nasal cavities
2 Feeling of dizziness &c
3 Temp. may rise
Treatment - Dover's powder & warm foot baths. Quinine
a snuff of Subnitrate of Bismuth.

Chronic
Causes - 1 arises from acute
2 " " Injuries
3 Mucous membrane is thickened & hypertrophied
Symptoms - 1 Discharge from nasal cavities
2 Hawking &c
3 Impaired General health,
Treatment - 1. correct hygiene
2 Locally astringents Cautery &c

Larynx - Laryngitis & Croup.

Laryngitis - | Catarrhal
Oedematous
Ulcerative
Catarrhal | mild type
severe "

Ordinary Catarrhal Laryngitis - affects all ages
Causes - atmospheric changes (Teachers, Public Speakers &c)
Symptoms - 1 Pain in Larynx (smarting or burning)
2 hard, dry cough.
3 hoarse & weak voice
4 General Malaise & febrile movement
5 Larynx red & swollen,
6 In 2 or 3 days - Secretion of glairy Mucus begins.
7 The attack lasts from 5 to 10 days.
Prognosis is good -
Treatment - 1 The voice must not be used
2 Keep air in room warm & moist.
3 Counter irritation of Tinct. of Iodine
4 Internally applications of [illegible] ammonia, [illegible] Chlorate &c
5 May give Quinine 8 grs daily.

Severe Acute Laryngitis - dangerous to children,
Causes same as ordinary Laryngitis.
Symptoms - 1 Fever 102° or 103° F.
2 Skin hot & moist
3 Pulse rapid,
4 Breathing hurried
5 Severe pain in Larynx
6 Voice may be reduced to a whisper
7 no membrane &c
Duration - 4 to 14 days
Treatment - 1 Rest in bed
2 Counter irritation
3 Steam the throat [illegible] atomizer
4 Internally give calomel gr 1/4 with Dover's powder grs 2 or 3.
[illegible] quinine & [illegible]

In Our **Diagnosis** we should eliminate Amyloid Degeneration and Leucæmia.

Hydatids of the Spleen. The morbid Anatomy is the same here as elsewhere. There may be a single or multiple cysts which may be situated in, or only attached to, the organ. The spleen has a peculiar parchment-like feel on Palpation, giving a distinct sense of fluctuation. It contains a pellucid liquid of a low specific gravity, with no albumen. The tumor is painless and grows slowly, the health being but slightly affected.

Diagnosis. There are scarcely any other kinds of cysts to which this organ is subject. We base our diagnosis on the absence of signs of other splenic diseases.

Prognosis, if it is recognized, is good. If left alone there is danger of its rupturing or a pyæmia being set up.

Treatment is purely Surgical, and consists in the evacuation of the cyst. A single puncture may suffice, but if it refills it must be again punctured and injected. If it obstinately recurs, a fistula must be established and the cyst injected and drained until it finally closes, or laparotomy may be performed and the tumor enucleated.

V. AFFECTIONS OF THE RESPIRATORY TRACT.

I. THE NOSE.

The **Nasal Cavities** are subject to Catarrh, which may be either Acute or Chronic. The word Catarrh is applied to all inflammations of mucous membranes.

Acute Nasal Catarrh is not of very great importance; but owing to its great prevalence, its study possesses considerable interest.

Its **Causes** are those which generally produce "a cold in the head," *e. g.*, **atmospheric changes, damp and cold feet,** exposure to draughts of air or **irritating vapors.** The tendency to "take cold" (as it is called) is associated with a lowered tone of the system, and also with an individual weakness of the Mucous Membrane. Thus, **Scrofulous subjects** are peculiarly liable to it. It may also be brought about by a defective **shape of the Nostrils.**

Symptoms are both Local and General. The **Local Symptoms** are —1. **Smarting pain** in the nasal cavities. There is a stage of **Watery Secretion.** This becomes gradually thicker, and finally muco-purulent. The **General Symptoms** consist in a feeling of **Languor** and Dullness, **aching** across the brow, a "creepy" sensation throughout the system, and **pain** in the limbs. The **voice** changes, and is apt to be lost. The **Temperature** may run up to 100½° F., or in a sensitive child to 101° F.

Prognosis. With little children only is the disease serious, in so far as it may offer an obstruction to breathing.

The **Diagnosis** is very plain. When we meet with Coryza, we should be on the lookout for Measles.

Treatment. The patient should, if possible, stay indoors and take rest. We may order a Dover's powder and a warm foot-bath. A cap or handkerchief should be worn on the head at night, or we may adopt a Tonic Treatment, giving viii–xii grs. of Quinine, and paying attention to the clothing, etc. A snuff of Sub-Nitrate of Bismuth is often of service. A person tending to "take cold in the head" should be subjected to Systemic Treatment, special care being taken of the skin. Nutrients, as Cod-liver Oil, and regular Gymnastics should be recommended.

When a cold in the head runs on for some time we have what is known as **Chronic Nasal Catarrh.** This either arises—1. From repeated attacks of the Acute; or, 2. May begin as such from the outset. This is especially the case in persons of relaxed tone and in Syphilitic and Scrofulous subjects. 3. *Injuries* of the nose may produce it. This Affection may be in the Nasal Cavities or in the upper part of the pharynx. The mucous membrane is thickened and hypertrophied.

Symptoms. The discharges from the nasal cavity in chronic catarrh vary in quantity, consistence and color. They may fall backwards into the throat and cause **hawking.** This is unfavorable, as it induces congestion of the mucous membrane there too. The **voice** is altered, owing to suppression of the nasal sound. A habit of mouth breathing is developed, owing to the accumulation of mucus in the nasal cavities. A **chronic Pharyngitis** may be brought about. The **General health**, too, suffers indirectly.

The **Diagnosis** of Chronic Nasal Catarrh presents no difficulty, but its exact location by means of the Laryngoscope requires practice. It is only recently that this has come into vogue, and the **Prognosis** is thus rendered more favorable than before.

Treatment. *Hygienic* Treatment is essential. We must pay attention to the habits, dress and tone of the patient. All taint of Syphilis or Scrofula, when they exist, should be eradicated. *Locally* we may use Solutions of Sulphate of Zinc and Nitrate of Silver, or an astringent powder may be blown into the parts. The condition of the mucous membrane may be such as to demand the application of the Cautery. A bone may have to be sawn away, as from Exostosis, or there may be a displaced Septum, requiring special treatment. We should, however, always try mild local measures first.

II. THE LARYNX.

Laryngitis and Croup. *Laryngitis* may be

1. Catarrhal.
2. Œdematous.
3. Ulcerative.

Of the *Catarrhal* form we have—1. A Mild; and 2. A Severe type.

I. **Ordinary Catarrhal Laryngitis** affects all ages.

Causes are Atmospheric Changes. The Larynx when heated is suddenly cooled. Teachers, Public Speakers, Preachers, and all persons who use their voices much, persons of relaxed fibre, are prone.

Symptoms. There is—1. **Pain** in the Larynx of a smarting or burning character, which is increased by coughing or laughing. 2. **Cough,** which is hard and dry, and causes pain. 3. The **Voice** *is altered*, becoming hoarse, rough and weak. 4. There is General **Malaise** and slight **Febrile** symptoms. 5. The **Laryngoscope** shows Redness and Slight Swelling. In two or three days the Secretion of **Glairy Mucus** begins, thin at first, becoming thicker, and gradually diminishing in quantity, the attack lasting from five to ten days. In nervous children with acute Catarrhal Laryngitis there is more or less **Muscular Spasm** and Symptoms of Croup. But grown persons as well may have Symptoms of Croup. When we speak of *Croup Symptoms*, a coarse, hard, brassy, ringing Cough is meant, *e. g.*, a Croupy Cough is noticeable is Bronchitis.

Croup an acute febrile disease with obstruction of Larynx with spasm & cough

Spasmodic or False Croup - a mild or Catarrhal Laryngitis with spasms of the muscles of larynx & inflammation

Causes - Childhood & predispositions
& irritation disturbances
Symptoms - 1 Begin with those of a slight cold
2 Its onset may be sudden
3 Skin covered with sweat
4 Expression anxious & face flushed
5 Chest recedes
6 Cough is hoarse noisy & croupy
Prog. good
Treatment - Guard against future attacks.
Syrup of Ipecac to cause vomiting & relax spasm.
Keep patient in bed in a warm room & on light diet,
Keep the throat moist

Membranous or True Croup - it is Idiopathic [illegible] with
Diphtheria
Symptoms. 1 Fever, Languor, Lassitude, Sore throat, cough, hoarseness
2 then comes obstruction symptoms,
3 the breathing grows more & more difficult
4 " voice " " weaker
5 " chest becomes distended
6 In some cases there is a membrane in the throat.
7 Tonsils are red
8 Glands at angle of jaw may be swollen & tender
Morbid Anatomy - We find exudate in the larynx with a membrane
Prognosis is grave
Treatment - 1 Rest in bed
2 Regulate diet
3 Use following
Ammon Muriat
Potass. Chlorat aa ʒj
Mist Glycyrrhiz Comp ℥iij
Sig - ʒj every 3 or 4 hours.
4 Give a steady course of Calomel
5 " [illegible] hypodermic
6 [illegible]
7 Give alcoholics
8 Perform tracheotomy.

Chronic Conditions of Larynx. | Catarrhal
| Ulcerative | Tuberculous
Syphilitic
Cancerous

Chronic Laryngitis - follows repeated acute attacks.
In it we have Redness of vocal cords, epiglottis & larynx
Symptoms - are Hoarseness
Smarting & fullness of larynx
Cough is hacking
voice hard & hoarse,
Mucus expectoration is great
Treatment - Apply [illegible] stimulate the
external counter irritation

Tumors of the Larynx | simple
malignant mostly they are papillomas
Symptoms - voice grows weak
Progressive Dyspnoea
Pain & cough are generally absent
Treatment - Remove the growth thro the mouth if possible

[illegible] of Larynx - appearance is [illegible] [illegible]
there is a craving [illegible]
Swallowing is difficult
Treatment - [illegible] may be [illegible]

Diseases of the Bronchi & Trachea

Bronchitis { Acute { simple
capillary
mechanical
secondary
fibrinous
chronic

[illegible]

Simple Acute - an inflam of lining membrane of bronchial tubes
Causes 1 Climate
2 Run down system
3 Age (common in young)
4 Cardiac diseases
5 Occupations

Morbid Anatomy - at first a state of dryness of parts, then swelling & redness

Symptoms - 1 Rigors with fever
2 aching pains in back, limbs &c — occurs on both sides
3 Cough
4 soft mucopurulent expectoration
5 lasts 7 till 14 days

Physical Signs - auscultation - shows sonorous & sibilant rales & later mucous rales

Capillary Bronchitis is most common in children
Symptoms 1 Fever & rapid pulse
2 Face flushed
3 Breathing rapid
4 Respirations increased
Later mucopurulent expectoration
Physical Signs - Sub-crepitant rales
the resp murmur is weak.

Mechanical Bronchitis - is bronchitis in a [illegible] subject to Venous Stasis in heart dis[illegible]
here there is a tendency to Congestion & Oedema of the Lungs
We hear Sub-crepitant Rales

Secondary bronchitis occurs with other acute diseases, blood disorders

Fibrinous Bronchitis is rare - it usually occurs in adults.
Symptoms - 1 Fever of an irregular character
2 Rapid Pulse
3 Debility
4 Cough, hard & troublesome
5 Little expectoration. Casts [illegible] be expectorated
Physical Signs - shows ordinary Bronchitis, limited to one side
aspirating murmur is weak
[illegible] are found in the bronchi after death

Rheumatic Bronchitis - is Rheumatism of the bronchial tubes.
1 The patient has a history of rheumatism
2 there is great pain on coughing
3 the secretion is [illegible] & mucoid
4 It is caused by Acute Rheumatism

Diagnosis of Acute Bronchitis
Must [illegible] [illegible] from [illegible] [illegible] of the lungs

Treatment -
1 Rest in bed
2 [illegible]
3 Counter irritation [illegible]
4 [illegible] expectorants
5 Meet the fever with Aconite or [illegible]

Diagnosis is easy, and the **Prognosis** is favorable, but attended with some anxiety, as in children ordinary Cartarrhal Laryngitis may run into something else

The **Treatment** is simple. The voice must not be used. The air of the patient's room must be kept warm and moist. Counter-irritation over the front of the neck by means of Iodine. We may use Fomentations, or simply cold water, protected with Rubber or Oil Silk. Local applications of water, Lime Water, Weak Ammonia, or Lime Water with a little Carbolic Acid, are useful. *Internally* we give some Sedative and Laxative as the following:

℞ Morph. Acetat. grss.,
Syrup Ipecac fʒiij,
Sol. Acetat. Ammon. f℥iv.
Mft. Sign.: Two Teaspoonfuls every four hours.

We may use besides Spirits of Mendererus, and about 8 grains of Quinine along with the above. Children bear large doses of Quinia by the Rectum well.

Severe Acute Laryngitis is dangerous to the child; much more so than to the adult.

Its **Causes** are the same as those of ordinary Laryngitis, but usually there are predisposing causes, as former attacks.

Symptoms. Fever of unusual severity. The Temperature running up to 102° F. to 103° F. The **Skin** is hot and moist. The **Pulse** is rapid, strong and excited, the **breathing** hurried. There is severe **pain** in the Larynx. The **Voice** is reduced in volume to a mere whisper sometimes. **Cough** is frequent and painful, and is reduced in force to a wheezy sound. The child is restless. There is a **sense of oppression** and obstruction. Sometimes the child sits erect in order to breathe. Examination of the Fauces and Larynx shows no **pseudo-membrane**, but there is intense congestion of the Mucous Membrane. This reaches its height in two days.

The **Duration** of the Disease is generally from seven to nine days, but it may last fourteen.

The **Diagnosis** is easy as to the presence of Laryngitis, but in a child we are always anxious about the existence of a pseudo-membranous deposit. Indeed, we can often only determine its absence by the fact of its not being discharged, and the child getting well.

The **Prognosis** is favorable, but anxious.

Treatment. Put the child to bed. Keep the temperature of the sick room humid and even. Apply counter irritation to the affected region. If the symptoms are very severe, a few leeches may be applied to the throat, followed by a fomentation. Blisters are not recommended. Cold packs kept on night and day are preferable. Frequently steam the throat by the atomizer from a funnel over some hot sedative liquid. Internally, give Calomel with Dover's powders in pill form to suit the case, *e. g.*, ¼ gr. Calomel with 2 or 3 grains of Dover's powders for three or four days. Also, give full amounts of Quinine at different times. When the symptoms subside, use alkaline solutions, as Ammonia, etc.

Croup is the name applied to an acute febrile disease, attended by obstruction of the Larynx with Spasms, causing a peculiar sound of the voice and a Cough. There is always present an element of inflammation and spasm. When the Spasm is the chief element we speak of it as Spasmodic Croup; on the other hand, we may have Pseudo-Membranous Croup, in which the spasm is a minor element.

Spasmodic or **False Croup** is a mild or Catarrhal Laryngitis with a high degree of spasm of the Muscles of the Larynx and an inflammation of a light degree.

Causes. 1. **Childhood**; and 2. An individual **predisposition** which is very marked in some families. 3. It occurs mostly in children before the close of the first dentition. Indeed, it would seem as though there is a tendency in the first **dentition** to bring on this disease. 4. **Digestive Disturbances.** 5. Some adults have Croup, but such cases are rare, and generally occur in persons of a **highly neurotic temperament.**

Symptoms begin with those of a **slight cold.** They point to irritation of the Throat and Larynx, but are often overlooked, and the onset of Croup is sudden, frequently awakening the child after midnight. The child is alarmed and agitated. The **skin** is covered with sweat. The child is febrile. Its **expression** anxious and **face** flushed. **Breathing** is difficult, and at each inspiration there is a loud stridulous croupy sound. The **supra-sternal** notch sinks. The **chest** recedes. The **cough** is hoarse, weak, and croupy. Speaking is impossible, and the voice is reduced to a whisper. The Spasm is relaxed by the very thing it brings about, viz., the accumulation of Carbon Dioxide in the system, and soon the attack is over. They generally last a few moments. Rarely does the child have a second attack that night. Next day the child is feverish and croupy, and there is danger of a recurrence of attack the next night. The Laryngoscope shows no congestion.

The **Diagnosis** is easy, if we bear in mind the Suddenness of the Attack, the Constitutional Disturbances, and the way in which it yields to treatment.

The **Prognosis** is altogether good.

The **Treatment** is simple. The principal point is to guard against future attacks. We should instruct the parents as to the care of the child when it has a cold. Such children are very sensitive. When they have a cold they should be kept in bed, in a warm room, and on light diet. Sometimes a sponge dipped in hot water and applied to the Larynx does good. A hot bath will often break up a Spasm. Sprup of Ipecac causes vomiting and relaxes the spasm. Mouth-breathing is apt to bring on an attack. During sleep the throat gets dry, and this throws the child into a spasm. Hence, a child subject to croup should be waked up at intervals of a few hours during the night, and a teaspoonful of gum-water, or something similar, administered to keep the throat moist.

Membranous or True Croup bears a close resemblance to Diphtheria as regards its Pathology. We may have Membranous Croup either *Idiopathic* or *associated with Diphtheria*. It is hard to say what is the relative frequency of True Membranous Croup and Diphtheritic Croup. In a large number of cases it is not Idiopathic. Membranous Croup develops gradually, and is called "Creeping Croup."

Symptoms begin with Fever, Languor, Lassitude, Sore Throat, Cough, Hoarseness, and alteration of the voice. These last for two, three, or four days, but may be so slight that they are overlooked, and Membranous Laryngitis appears suddenly. Then come **Obstructive Symptoms.** The **Breathing** grows more and more difficult. The **voice** becomes more and more whispering. The hoarse character of the cough is suppressed. It becomes a mere effort at coughing. The **Chest** cannot be distended, the **Lungs** cannot be filled, and the base of the Chest is pressed in at each inspiration. The **Supra-sternal Notch** is sucked in from the same cause. These symptoms are attended with a weakening of the Pulse, Livid lips and Features. There is interference with Oxidation, and **spasms of Dyspnœa,** which threaten and sometimes cause sudden Death. The child is Restless and tears at its Throat. We have an accumulation of Carbonic Acid, and Death comes from Apnœa. In some cases there has been Membrane

6 To [illegible] [illegible] [illegible] &c

If the expectoration [illegible] give Ipecacuanha, Carb of Ammon, Nux Vomica &c
" " profuse " " Carb of Ammon + Iodide of K,
" " [illegible] " K.I, Salicylate of Soda, Carb of K, &c

Chronic Bronchitis is a chronic inflam of the bronchial Tubes.

Causes 1 Inclement climate
2 Inhalation of irritating vapors
3 May arise from repeated acute attacks
4 as [illegible] which impair lung circulation as in [illegible]

Symptoms & [illegible] & [illegible]
General - 1 troublesome cough
2 stringy expectoration,
3 hemorrhage is rare
4 resp is not much quickened
5 Pulse rapid & weak
6 shortness of breath on exertion
7 There may be night sweats

Physical Signs - Percussion is normal
mucous rales
Resp murmur but little changed

Diagnosis from Phthisis by no hemorrhage, age of patient &c

Treatment - 1 Pay attention to hygiene
2 Remove the cause
3 Inhalations are very valuable (Carbolic acid, Creasote)
Give Cod liver oil, Arsenic, Squills &c

Dilatation of Bronchial Tubes. may be Uniform or Sacculated
Causes are those of bronchitis
the expectoration is copious & may be [illegible]
Physical Signs - 1 Diffused blowing resp.
2 Lungs may be contracted
3 Impaired resonance
4 there is generally emphysema &c
Prog. the lesion is incurable
Treatment is that of chronic bronchitis

Emphysema - in [illegible] emphysema the air cells are overdistended, we have the Atrophic & Hypertrophic forms also the Vesicular

Causes 1 Repeated violent efforts at coughing
2 Rupture of vesicles & entrance of air into pleura

Morbid Anatomy 1 Lung enlarged
2 its outline is altered, it is [illegible] rigid
3 It does not crepitate but has a cottony feeling
4 It is paler than normal
5 Atrophic emphysema is where the lung is contracted & indurated
6 The vesicles may break & cause pneumothorax

Symptoms - 1 there may be no cough nor expectoration or there may be both,
2 habitual Dyspnoea, (because the lung is so inflated that no new air can get in)
3 Chest is globular [illegible] the upper & lower movement of chest
4 Changed Resp murmur
5 Percussion gives exaggerated resonance
6 [illegible] is higher, the [illegible]
7 [illegible] flushed to night.
8 expiration is prolonged & inspiration shortened —

[illegible] it [illegible] early [illegible] be cured

Treatment - I Remove the Chronic Bronchitis.
II allay the [illegible] condition
III [illegible] the Respiration
IV Give Tonics

Asthma - Spasmodic paroxysms of dyspnoea [illegible] wheezing.
3 Kinds | Bronchial
| Cardiac
| Renal

Symptoms - 1 Sudden attacks
2 Cannot lie down
3 Much sweating
4 Forcible play of Resp. muscles
5 The veins are distended
6 Expiration is prolonged
7 Inspiration is [illegible]
8 the pulse is rapid & weak
9 there may or may not be cough

Treatment
of attack - relax the spasm & relieve the congestion & catarrh
Smoke stramonium leaves
Inhalation of Amyl Nitrite & chloroform
Belladonna [illegible] Opium
Give [illegible]
external counter irritation
In the intervals
Tonics, Strychnia, K. I. Arsenic.
Change of climate

Hypostatic Congestion - engorgement of the lungs with or without infiltration - affects chiefly the posterior inferior part. It occurs in low fevers as typhoid

Sympt. Resp. embarrassed & weak -
Face dusky
[illegible] weak
Impaired resonance over affected part
Sub crepitant rales
Treatment - treat the disease causing it
[illegible] it is due to feeble condition of heart
Carb. of Ammon. & Strych.

Pneumonia | Catarrhal
| Croupous

Catarrhal Pneumonia - an acute catarrhal inflam. of the [illegible] of lung.
Synonyms - Broncho pneumonia, lobular pneumonia
Causes - 1 extension of a bronchial catarrh.
2 Certain eruptive fevers as measles
3 Exposure to damp & [illegible]
4 [illegible]
Morbid Anatomy 1 [illegible], swelling, [illegible]
2 Walls [illegible]
Symptoms - 1 Moderate fever 102 to 103°.
2 [illegible]
3 [illegible]
4 [illegible]
5 Pain & [illegible]

in the Fauces before the Laryngeal symptoms. There may be no Membrane in the throat. The **Tonsils** are red and the **Pharynx** injected. The **Glands** at the angle of the jaw may be tender and swollen, but when the Membrane is in the Larynx first we have very little lymphatic enlargement, whether it be Diphtheritic or Idiopathic. When Diphtheritic we have more adynamic symptoms. But we cannot base our Diagnosis on Constitutional Symptoms. They both run into extreme Debility. Obstruction may become complete and death take place on the third day, but more commonly the case lasts from six to nine days.

Morbid Anatomy. We find a deposit in the Larynx, beginning at the vocal cords. We have a cast of the Larynx, or it may be broken at points. This membrane is whiter and tougher than it is in the Pharynx. It may reach down to the Bronchi. The mucous membrane beneath is raw, congested, and excoriated, but is not ulcerated. The Post-Tracheal and Bronchial Glands are enlarged. The Lungs have Patches of Catarrhal Secondary Pneumonia.

Diagnosis of Membranous Croup is easy. *Simple Catarrhal Laryngitis* may have severe symptoms. Where Spasmodic Croup occurs there is no difficulty. Its sudden onset, and the fact of its yielding suddenly to treatment, would at once reveal simple Laryngitis. The Diagnosis is greatly assisted by a patch of membrane on the tonsils. The child may vomit a portion of membrane, and this reveals the true nature of the case, whether it be of the Idiopathic or Diphtheritic type.

Prognosis is very grave. Many cases die.

Treatment. Use prompt, strict treatment in apparent trivial diseases. Anticipate serious developments by Restraint in Bed and Attention to Hygiene. Regulate the Diet. Keep off Draughts. During the first day or two use Muriate of Ammonia and Ipecac with Squill and Opium, but as soon as local trouble appears give a steady course of Calomel. We may associate Chlorate of Potassium with Muriate of Ammonia, on account of liability to Faucial Irritation. For this early stage use something like the following:

℞ Ammon. Muriat.,
Potass. Chlorat. aa ʒi,
Mist. Glycyrhiz. Comp. f℥iii.
M. ft. S.: fʒi every three or four hours.

For very young children substitute Syrup of Ipecac for Potash. If this has no effect give gr. iii of Calomel, to purge, and after this gr. ½ every one, two or three hours. It is well to give the Calomel with an alkali, as Carbonate of Potash. It never salivates. If it is a case of Putrid Laryngitis in Scarlet Fever, this treatment would be futile. Meanwhile give Quinia by the Rectum, and apply Iodine over the neck. Protect the surface by light batting of cotton. Give inhalations of Lime Water or Boracic Acid, or Pepsin and Lactic Acid. Put a couple of grains of Pepsin and a few drops of Lactic Acid into the cup of the Atomizer. Nourishment must be kept up. Heart failure is a great danger. Give Alcohol; it is well borne. But the Symptoms of Obstruction may go on. There is danger of sudden death from Heart Clot, or Pulmonary Collapse. Perform Tracheotomy where the symptoms persist. It is a hard operation in a child, but there can be no apology for not performing it. The Fatal results are due to delay. The Temperature of the room must be high and the Air moist. The surface of the tube must be covered with Glycerine, and the tube cleaned from time to time.

Chronic Conditions of the Larynx. Under this head we have two conditions. Chronic Laryngitis may be simply Catarrhal or Ulcerative, under which head we have—1. Tuberculous. 2. Syphilitic. 3. Cancerous.

Chronic Laryngitis follows repeated Attacks of Acute Laryngitis. It is most common in those who have abused their voice. It may come on from the start as Chronic. We have **Redness** of the Vocal Cords, Epiglottis and Lining of the Larynx; **Enlargement** of the Follicles, **Accumulations** of Morbid Secretions; but the muscular movements of the Larynx are well preserved.

Symptoms are Local. There is **Smarting** and **Fullness** in the Larynx. The **Epiglottis,** if swollen, may cause a disposition to swallow. There is **Cough** of a hard, Laryngeal character. The **voice** is hard, harsh and hoarse in tone. Mucus expectoration is great. The **general health** may be well preserved.

Diagnosis. We recognize the disease by the Laryngoscope. We see an absence of any Bronchial or Pulmonary Disease. The Maintenance of the General Health is an important thing in the Diagnosis. Where it is Syphilitic or Tuberculous we have impairment of health.

Prognosis is good if the patient breaks up the Habit of Life inducing the Disease.

Treatment. The patient should learn how to use his voice rightly; not abuse it. *Local Treatment* can be employed by puffing Powders into the Larynx, guided by the Laryngoscope. *Internal Remedies* are Alkaline Salts, as those of Potash and Soda, and Copaiba.

℞ Ammonii Muriat., or Brom., gr. c,
Ext. Eriodyc. f℥i,
Mist. Glyc. Comp. f℥iii,
M. ft. S.: fʒii ter. die.

If there is soreness we add Bromide of Ammonia. *External Counter-Irritation* is useful here.

I. In **Tuberculous Laryngitis** we find a remarkable degree of Swelling over the Arytenoid Cartilages. This is so often met with that it has a Diagnostic value. The Cartilages are rounded. In **Ulcerative Laryngitis** we may or may not find Tubercles. They may be at the base of the Lungs. The Lungs may be involved first, or the Larynx may. Tuberculous Laryngitis may be Primary or Secondary to Tuberculosis elsewhere.

Symptoms are Troublesome **Cough, Expectoration** of Glairy Mucus and some Pus, and severe **Pain** in the Larynx. Before long there is **Difficulty in Swallowing,** owing to the Inflammation of the Arytenoids. Death may be hastened by taking food. The **Voice** is altered, being reduced to a whisper. There may be complete Aphonia. The **General Health** may fail. Some cases last only a few months; others several years.

Diagnosis. Extreme care is necessary. It is important to know whether the Lungs are involved or not. This is often difficult. Rales are formed, and there is a complication of sounds. The Chest must be ausculted, both when the mouth is open and closed. The determination of the existence of the disease in the Lungs has an important bearing on the Laryngeal trouble. If the Lungs are healthy, and there is no Syphilis, yet at the same time obstinate Laryngitis, we are led to regard it as a Catarrhal Laryngitis.

Prognosis is bad but the case may undergo temporary Improvement.

The **Treatment** should be directed to the Improvement of the General Health, to the Pulmonary Trouble, and to the administration of Local Remedies, for the Laryngeal Trouble by the use of Inhalations. The application of Iodoform in solution, paste or powder. The Alkalies and Nitrate of Silver are not so safe. Food should be taken by a tube. If Dyspnœa or Dysphagia threatens life, tracheotomy may be indicated.

II. **Syphilitic Ulceration** of the Larynx is a constitutional expression of syphilis. The Anatomical Characters differ from Tuberculous. Here the

6 expectoration - mucopurulent —
7 Crackling rales
8 Rapid pulse;
9 Moist skin
10 Subcrepitant rales

Perichondrium is swollen, the Cartilages break down, and the Ulcers are superficial and deep. They are irregular and extensive,—all parts of the Larynx being affected. Not rarely ulceration of the Fauces is associated.

Prognosis is favorable as regards life, but if not recognized early, Deformity is left behind, Cicatrices form, and fibrous bands encroach on the aperture. The Voice is often prematurely affected, and also Deglutition. This Stenosis causes obstruction.

Treatment. Internal Constitutional Medication works wonderful results. External Counter irritation should be made over the Cartilaginous portion of the Larynx with the Laryngoscope. Nitric Acid, Caustic, or Sulphate of Copper may be applied locally to the ulcers. Sometimes Tracheotomy is necessary in Stenosis.

Tumors of the Larynx may be—1. Simple. 2. Malignant. Mostly they are Papillomata. They may occur at any age or may be congenital. They are met with late in life. In shape they are sesile or pediculated. Their rate of growth differs.

Causes are obscure. They seem to occur in persons who are predisposed to such growths.

Symptoms are apt to be overlooked. There are alterations in the **voice,** it grows weaker, is unreliable, loses volume, cracks or breaks, is sometimes whistling—the tumor being between the Vocal Cords. There is **Progressive Dyspnœa** complicated with **spasms** from time to time. This Dyspnœa in a typical case is permanent. Pain and Cough are not very common. The **Cough,** when it exists, is hard and spasmodic. The **General Health** does not appear to suffer.

Diagnosis must be made with the Laryngoscope. This will reveal whether there is one Tumor or many. The absence of Syphilitic History and Tuberculosis must be taken into consideration.

Prognosis of simple tumor is good. But if treatment is postponed, Tracheotomy may have to be performed, owing to sudden spasm.

Treatment consists in the removal of the Growth. If it cannot be reached through the mouth Tracheotomy must first be performed.

Cancer of the Larynx. The History of Cancer is a painful one. Cancer appears in elderly Subjects. It may be *Primary* or *Secondary* to growths in the Neighborhood. There is excessive **Pain. Swallowing** is difficult. There is more or less extinction of the **Voice, Cough,** and **Expectoration.**

The **Diagnosis** by means of the Laryngoscope and the History is easy.

Prognosis is hopeless.

Treatment can only be Palliative, and consists in supporting the patient's system.

Diseases of the Bronchi and Trachea.

Bronchitis is—I. Acute. II. Chronic. Under Acute forms come—1. *Simple.* 2. *Capillary.* 3. *Mechanical,* with Hypostatic Congestion. 4. *Secondary.* 5. *Fibrinous.*

I. **Simple Acute** is an inflammation of the lining Membrane of the Bronchial tubes. It is excessively frequent.

Causes. 1. **Climate.** The disease is more common at severe seasons of the year and in rough climates where there are sudden changes. In most climates it is not so bad unless Cold winds exist. High winds, much Dust, and a Dry climate favor Bronchitis. 2. A lax, **atonic state of the system** predisposes to it. 3. **Age.** It is most common in early life. 4. Existing **Cardiac Disease.** 5. **Occupations** in which the person is exposed to irritating vapors or dust as in Mines. 6. It is an attendant on

Certain **General Diseases,** as Measles, Typhoid Fever, and most Blood diseases. It frequently complicates Phthisis and Emphysema. 7. In rare cases it is connected with the **Gouty and Rheumatic** Diathesis.

Morbid Anatomy. At first there is a state of dryness of the parts; then Injection, Swelling and Redness of the Bronchial tubes. The Swelling is very variable, and may amount to Obstruction. There are patches of inflamed areas, and the swelling completes the closure of the small tubes, after which there is a Morbid Secretion. This condition is called Capillary Bronchitis. Sometimes we have a Fibrinous Formation, which may fill up the tubes of one side. Usually this Fibrinous Formation is a true morbid Product of a Pseudo-Membranous character. In a child we may have little patches of collapsed Lung, from occlusion of the bronchial tree where the lesions are symmetrical and bilateral.

Symptoms—General. There is a **Rigor,** followed by more or less **Fever,** attended with aching **Pains** in the back, limbs and head. Often the Febrile Symptoms are not marked. There is pain in the Chest and hard **Cough,** increased by talking or using the voice. Pain under the Sternum is often complained of. Otherwise the symptoms are very slight. After this condition has lasted for about two days the cough grows softer, and there is a free, soft, muco-purulent **expectoration.** The General Symptoms subside in a few days, and the attack terminates in from seven to fourteen days.

Physical Signs. We observe no change on Inspection or Percussion. *Auscultation* reveals sonorous and sibilant Rales behind and down to the root of the Lungs. Later on Mucous Rales are heard at the base of the Lungs. These mark the two stages of—1. Dryness; and 2. Secretion.

II. **Capillary** Bronchitis is more common in children. It may be Primary or Secondary. When it is Primary it is acute and severe. The Temperature may be 102° F. or 103° F. The Pulse rapid. The Face flushed. The Breathing very rapid. In a child the respirations may be 60, 80, or even 100 per minute. In an adult 45 to 50. In children the base of the chest recedes. The respirations are shallow. There is Restlessness and Discomfort, which is not relieved, because there is no Expectoration. Later the Expectoration becomes soft and more muco-purulent, and then the Symptoms subside.

Physical Signs. In general there is *no impairment of Percussion Resonance.* *Auscultation* gives very extensive Sub-crepitant Rales, most marked over the antero-posterior portion of the Lungs. With these may be mixed some Sonorous Rales. *Respiratory Murmur* is in many places weak. Over the upper portion of the Lung there may be Supplementary increase of Respiratory Murmur. After a few days Nervous Symptoms may appear. We have Jactation, Failure of Peripheral Circulation, Engorgement of the Lungs, and Death from Carbonic Acid Poisoning. It is often fatal in four or five days; but it may last ten or twelve. Convalescence is apt to be protracted. The whole Duration may be fifteen to twenty-one days. It is very different from the ordinary Bronchitis.

Collapse is a term applied to Subjects who have fully expanded Lungs which have afterwards collapsed. It is more common in children as a complication—their respiratory muscles are weaker—but it may occur at any period of life, and especially when the System is exhausted.

Explanation. A Bronchial Tube has been partly closed by the Swelling of the Mucous Membrane, and then by the thick Secretion. A thick plug is formed. The act of Expiration, when violent efforts are made, is more powerful than inspiration. Thus, from parts of the Lungs where the

Obstruction is greatest, the air is pumped out and not replaced. A certain amount of air is absorbed, and we have a return to the Fœtal state. Either a spot may be affected the size of a cherry or a pin's head, or an entire lobe may be involved. The portions most liable to collapse are where the bronchitis is worst, and where it is difficult for the air to get back, *e. g.*, the Intervertebral Gutters, and along the attenuated anterior margins of the Lung. It also may extend into the Mediastinum.

Morbid Anatomy. The collapsed part of the Lung is sunken below the surrounding surface. It has a purplish color and is hard to the feel. It does not break down. If we inflate the Lung this collapsed portion will expand. This process of Collapse is inseparably connected with Bronchitis. It is rare as we have said, except in very attenuated systems.

Symptoms. The occurrence of this Complication would be recognized by **Dyspnœa. Frequency** of Pulse and Respiration, *without rise of Temperature* as in Pneumonia, by the appearance of areas of **impaired Dullness** on percussion, and **Distant Respiratory Murmur.** There is not that intense Dullness of Consolidation of the Lung.

Mechanical Bronchitis is simply Bronchitis in a person subject to Venous Stasis in heart disease. In these the Bronchitis is apt to be Subacute, but we may have spells. The chief point is there is a constantly marked tendency to Congestion and Œdema of the Lungs. We have a combination of pure Subcrepitant Rales with the ordinary Rale of Bronchitis. It may run into Subacute. A high degree of disturbance of breathing is caused with very little fever. Disorder of breathing and pulse is due to Cardiac disturbance. These are apt to be overlooked as the physician may only regard the Heart.

Secondary Bronchitis ensues in other acute diseases, blood disorders, Measles, and the like. It may be secondary to Pulmonary Phthisis. Some of these forms are inevitable. We hardly pay attention to it if moderate, *e. g.*, in Typhoid, Measles and Whooping Cough, the bronchitis is apt to be troublesome. It assumes more of the Capillary type especially in Whooping Cough, Diphtheria, and Measles. The gravity of any disease is increased by Bronchitis. It may run into Catarrhal Pneumonia or be associated with extensive Hypostasis of the Lung or Collapse.

Fibrinous Bronchitis is rare. It usually occurs in adults. There must be a predisposition.

Symptoms. There will be **Fever** of an irregular character for an indefinite time. The **Pulse** is rapid. There is a disposition to **Debility.** The **Cough** is hard and troublesome. There is violent hawking, but **little expectoration.**

Physical Signs show Ordinary Bronchitis, but it is peculiarly *limited to one side*, contrary to the rule of ordinary Bronchitis. Expiratory murmur is weak. The expulsion of a plug of fibrinous material gives great relief. Frequently we have a common chronic form. The patient is worn out, and dies of exhaustion. Plugs are found in the Bronchi after death.

Rheumatic Bronchitis is not merely Bronchitis in rheumatic subjects, but is a Rheumatism of the Bronchial Tubes. The patient has a history of Rheumatism. Great pain attends acts of Coughing, which is very frequent and harsh. The Secretion is clear and mucus, and continues so a long time. It will not break up into a purulent effusion. This form is singularly connected with changes of Temperature. It is rebellious to treatment. It is cured only by Anti-rheumatics, together with Bronchial Treatment. It may present Metastasis. Under it we include the Bronchitis of gouty subjects.

Diagnosis of Acute Bronchitis. We must observe certain precautions. There is danger of recognizing bronchitis but overlooking the Disease of which it is a Symptom, *e. g.*, in Typhoid and Measles. We must ask ourselves is this Primary or Secondary? Again, Acute Bronchitis may be confounded with Acute Tuberculosis of the Lungs. This may present a great deal of embarrassment, but its Bilateral Character, Mild Symptoms, will set us right. We may find Bronchitis limited to one side. This is the case generally when Bronchitis is Secondary in Malaria or Typhoid, or where there is some local weakness of the Lung, which may afterward develop Tuberculosis. It indicates a local vulnerability.

The **Prognosis** in the *ordinary form* is good. In *Capillary* grave. In the *Mechanical* form it depends on the condition which it has followed.

Treatment. Every patient demands Restriction to bed. He must not even be allowed to go about his room. A mild attack may thus be converted into a Severe. Talking and Excitement must be avoided, especially in old persons. Nervous Exhaustion may turn it into Capillary Bronchitis. Counter-Irritation of a mild diffused character, *e. g.*, Tincture of Iodine painted over each chest six or eight inches square or repeated Mustard Plasters applied twice or thrice a day. Turpentine Liniment. The yolk of an egg to a wineglassful of Turpentine and thinned with a Tablespoonful of Vinegar is good, but it is too strong for a child. It must be diluted with Cream or Water. Place this over the Chest. Then a layer of raw Cotton which may be stitched to the under shirt. If it is Capillary Bronchitis stitch oil skin outside. If there is a moderate Cough promote Expectoration. Fever should be met by Aconite or Veratrum Viride. Give Aconite in divided dose. For an adult gtt i every hour for seven hours. By the time gtt v are taken, we should have a marked effect. For a child five years old, give gtt iii in nine spoonfuls of water. Stop during the night and begin next day. We may combine a moderate amount of Quinine. If there is a tendency to run into the Capillary Form give Strychnia and Nux Vomica. The strain on the muscles of respiration must be relieved. Give Opium to stop the Cough or Chloral or Bromide of Potassium or Ammonium. It is best to prescribe the Opium in a separate form as the Deodorized Tincture or the Officinal Solution of Morphin or for children, Paregoric. We may combine Opium, Ipecac, and Liquor Ammonii Acetatis or Citrate of Potash. This is relaxing sedative and alkaline. When the fever is subdued, we substitute Muriate of Ammonia and Brown Mixture.

℞ Morph. Sulphat. gr. i,
Syrup. Ipecac fʒii ss.,
Syrup. Scillæ fʒvi,
Syrup. Prun. Verg. f℥iss,
Glycerin, ad f℥iii.
M. ft.

In the **Capillary** form give Quinia, Carbonate of Ammonia, Nux Vomica. We must not use Opium. Various demulcent drinks, Rock Candy, etc., may be given.

In the **Fibrinous** form give Carbonate of Ammonia and Iodide of Potassium to its fullest extent.

In **Rheumatic** bronchitis try Salicylate of Soda, Iodide of Potassium, Carbonate of Potash, Vinim Colchici, Salts of Ammonia, Squill, Ipecac and Senega.

1. **Chronic Bronchitis.**
2. **Winter Cough.**
3. **Emphysema.**
4. **Bronchiectasis.**
5. **Asthma.**

Chronic Bronchitis *is a Chronic Inflammation of the Bronchial Tubes.*

Causes. 1. It has a **Geographical arrangement.** The American climate favors it. **Inhalation of irritating vapors.** It is common in workers in mills, knife grinders, and persons who have to carry hot iron into the open air. It may be **Chronic from the start,** or arise from repeated **acute attacks.** Attacks of Winter Cough may each year last longer. Then the patient has it the whole year round. We have a **Constitutional Susceptibility,** which predisposes to congestion of the Mucous Membrane. All **agencies which impair lung circulation,** weak right heart, etc.

Symptoms are Local and General.

General are **Cough,** which is very troublesome, and is increased by change of Temperature, exertion of the voice, the inhalation of cold air, but *not occuring like phthisis, in fixed spells for the removal of accumulations.* This cough is more troublesome than that of Phthisis. The **Expectoration** may be stringy or tenacious. **Hemorrhage** is rare, yet when we have Emphysema it may occur. **Respiration** is not much quickened. The **Pulse** may be rapid and weak. Exertion produces **shortness of breath** and acceleration of the pulse. The effect on the **General health** varies. Some persons remain fleshy and plethoric, keeping the cough up many years. This is true of those subject to gouty Bronchitis. Others grow anæmic and lose flesh and strength. This varies with the spells of bronchitis. We may have a series of changes extending over years. If there has been dilatation of the bronchial tubes and purulent expectoration, we may have **Night Sweats,** great debility, and extreme Anæmia.

Physical Signs, if it is Simple, are largely negative. *Palpation* is normal. *Respiratory Murmur* but little changed. There are *Sibilent* and *Sonorous* Rales, or *large Mucous Rales,* extremely variable in position. Other changes are induced at length, *e. g., Vesicular Emphysema.* In Emphysema we have a globular chest, Exaggerated Vesiculo-Tympanitic Resonance, and Sonorous Mucous and Sibilant Rales around the base of the lung. Inflammation of a tube often extends to the tissue around the tube. and a hard mass is formed, which tends to dilate the Bronchial tubes. This Dilatation is of two kinds, Uniform or Saccular. 1. In *Diffused Dilatation* we find the Respiratory Murmur rough and blowing, both in Expiration and Inspiration. A lung may be Emphysematous or it may be thickened. 2. If *Saccular Dilatation* has been developed we have the signs of a deep-seated Cavity, Wooden Tympany, Exaggerated Vocal Resonance, Tubular, hollow, blowing murmur, both on expiration and inspiration. Quite often, from acute attacks of cold, the patient has asthma, *i. e.,* spasm of the bronchial tubes. It depends on the nervous mechanism of the Bronchi.

Duration varies from several months to fifty years. When there is purulent expectoration it may only last a few years.

Diagnosis. A knowledge of the exact state of the Lungs is necessary. The disease with which Chronic Bronchitis is most commonly confounded is Phthisis, where the spots of Disease are small and scattered through the Lungs. We distinguish Bronchitis from Phthisis by—The age of the patient and the history of the case; the marked alterations from time to time; the rarity of hemorrhage; the absence of Bacith from the Spula; its amenability to treatment; the absence of infiltration in the Lung tissue; the absence of signs of softening or Cavity; the bilateral involvement. The physical signs of Bronchitis are very shifting.

The **Prognosis** is uncertain, but not grave. Life may be prolonged indefinitely.

Treatment is very complicated. The dress, residence, occupation, climate, need attention. In all congested and inflammatory conditions *change of climate* can be recommended. The detection of the cause and its removal goes far towards putting the Treatment on a scientific basis.

Remedies. Inhalations are most valuable. They may be made with an Atomizer using Carbolic Acid, Muriate of Ammonia, and Sulphate of Zinc. If the expectoration is fœtid, Chlorinated Soda may be used.

℞ Tinct. Iodine fʒii,
Acid Carbolic fʒss,
Spirit Chloroform f℥ss,
Tinct. Conii fʒss.
M. ft.

Put a few drops on the sponge of an Inhaler or we may use Pumice Stone which can be washed with Alcohol afterwards. Where we have reason to suspect Emphysema, let the patient breathe into an Exhausted receiver. Several kinds of Apparatus for this purpose can be procured.

Internal Remedies. Order Cod Liver Oil, Arsenic, and Colchicum in gouty cases. Ammonia and the Alkalies favor Expectoration. Iodide of Sodium and Ammonium combined with Carbonate of Potash. Vegetable remedies such as Senega and Squills, which are stimulating, and Copaiba which is alterative as well. If we desire to stop the Expectoration, we use Sedatives such as Stramonium, Belladonna, Hyoscyamus, and Opium. Opium, however, should be avoided as much as possible. Strychnia and Mineral Tonics are useful to give tone to the System.

Dilatation of the Bronchial Tubes may, as we have seen, be Uniform or Saccular.

Causes are those of common Bronchitis. The expectoration is copious, and if the Dilatation is Sacculated is fœtid. Gangrenous Bronchitis is often associated. It is of long standing.

Physical Signs. There is Diffused Blowing Respiration. Not rarely in the Sacculated form we find leaks at the roots of the lungs. Often the Lung itself may be contracted and Cirrhotic. This may impair the Resonance, but there is generally Emphysema, and consequently Exaggerated Resonance over the affected area.

Prognosis. The lesion is incurable.

Treatment is that of Chronic Bronchitis with the addition of Inhalations according to the character of the Expectoration.

Emphysema occurs in many forms. In real Emphysema the air cells are permanently over-distended. It is usually associated with degeneration —the walls being often broken down. We have *Atrophic* and *Hypertrophic* forms. By Emphysema, we mean Vesicular Emphysema. It is inseparably connected with Chronic Bronchitis.

Causes. Repeated violent efforts at Coughing. It may become associated with Sub-Lobular and Sub-Pleural Emphysema from Rupture of the Vesicles, and the entrance of the air to the Pleura.

Morbid Anatomy. The Lung is very much enlarged. Its outline is altered. It is irregular. The distended vesicles may hang like Cherries from the sides. When grasped, it does not crepitate, but has a Cottony feel. It is paler than normal. The Circulation being impaired, we have an enlargement of the Right Heart. *Atrophic Emphysema* is where the Lung is contracted and indurated. Sometimes the Vesicles break and we have as a sequel Pneumo-Thorax. The air may make its way round and give rise to an Emphysema of the cutaneous tissue of the whole body. Violent efforts of Labor have caused it. It is a rare Complication of Emphysema.

Symptoms. 1. The patient has had **Chronic Bronchitis**, but all evidences of Bronchitis may be wanting. We must not confound Emphysema and Bronchitis. *Cough* is not a symptom of Emphysema; nor is *Expectoration.* 2. **Habitual Dyspnœa,** which is progressive and finally extreme. It is increased by talking, excitement, etc. There are no lesions of the Lung to account for the dyspnœa. The Explanation is easy. The Lung is so inflated that no new air can get in, and there is only just enough oxidation to supply the simplest wants of the body. The **Chest** is globular, and the **Sterno Cleido Mastoid** Muscle prominent. **Respiratory Movements** are changed. We have the up and down movement of the chest, but expansion and retraction are wanting. **Percussion** gives Exaggerated Resonance. The Apex is higher; the base lower. This leads to the **Liver** being pushed aside. The **Heart** is overlaid and pushed to the right. The **Spleen** is displaced. **Auscultatory** sound is changed. There is a weak Inspiratory Murmur and prolonged expiration. *Resonance* and *Fremitus* are weak.

Atrophic Emphysema. We find the same progressive Dyspnœa, but the Chest is Alar and Phthisical. The Lung is retracted. If the thickening is considerable, and the Emphysema in patches, we may have Impaired Resonance. There is a diffused blowing sound. No change in the adjoining organs. As the Emphysema goes on the Heart and Circulation grow weak. **Dropsy** ascends from the feet. We have **Congestion of the Kidney** and transient **Albuminuria.** Rupture of the Vesicles may give **Hemorrhage** of moderate extent. The disease is unattended with Fever. There is distressing **Pain in the Chest,** and often Diaphragmatic Distress. From time to time **Spells of Asthma** occur. Phthisis is often a complication.

Diagnosis. We should look out for it in Chronic Bronchitis. When there is *Dyspnœa,* exclude Heart Trouble, Pneumo-Thorax, and Pleurisy. Fatty Degeneration of the Diaphragm is very rare.

Prognosis. Emphysema progresses with fluctuations. If taken early, it may be cured.

Treatment. Should be begun at once. The Indications are—1. To cure the Chronic Bronchitis. 2. Allay the Spasmodic Condition. 3. Put the patient in the best general condition. 4. Aid the acts of respiration by some apparatus, which will give additional rarification to the air several times a day. 5. Associate with this careful Calisthenics. Young children may be cured by the adoption of Pulmonary Gymnastics. 6. Give ascending doses of Strychnia and Arsenic as Respiratory and Muscular Tonics.

Asthma is a name applied to paroxysms of Dyspnœa with wheezing. It is not Dyspnœa. A patient with Emphysema or Fatty heart may have Dyspnœa, but not Asthma. It is Spasmodic and is sometimes called "Spasmodic Asthma." It is divided into *Bronchial, Cardiac,* and *Renal.* This is only for Pathological clearness. It may occur with either.

Symptoms. The attack is sudden. The patient is seized with **Dyspnœa** amounting to Apnœa. He cannot lie down. The **pupils** are dilated. He is bathed in **sweat.** There is a terrible play of all the **Respiratory Muscles.** The **Veins** are distended. **Expiration** is prolonged and difficult, and accompanied by **wheezing.** The **Pulse** is rapid and weak. There may or may not be **Cough. Inspiration** is very feeble. There are **Rales** mostly sibilant, but if Bronchitis is present they may be moist. An attack may last from half an hour to seventy-two hours. An intense degree of Muscular and Nervous Exhaustion follows a prolonged attack.

Bronchial Asthma. There may be no evidences of Bronchitis in the interval. Some atmospheric change brings it on. Some take it on top of Bronchitis. It may occur in Emphysema.

Renal. Any little increase of the malady, if there be a predisposition, gives rise to Asthma. The term Asthma has reference solely to the paroxysm. Asthmatics may present the tendency from childhood. It is sometimes inherited, and may be outgrown. It may be an idiosyncrasy. Some patients are thrown into Asthma by certain smells. Some can't live in the city; others cannot live in the country. The most trivial Disturbances of Health may produce it, *e. g.*, Eating Condiments, Shellfish, etc.

The **Diagnosis** is easy.

The **Prognosis** depends on the nature of the associated condition.

Treatment of Asthma. We must consider the underlying condition. 1. **The Attack.** In *General* the indications are to relax the spasm and relieve the Congestion and Catarrh. Spasm may be relieved by the Inhalation of Stramonium in Cigarettes. Espec's cigarettes are the best. These are composed of Belladonna, Hyoscyamus and Stramonium. Breathing the fumes of burning Nitre is a cheaper method.

Internally, Lobelia, Bromides, Opiates, or Hoffman's Anodyne may be used.

℞ Tinct. Lobeliæ gtt. cc,
Ammon. Bromid. gr. cc,
Spirit Ætheris Co. fʒx,
Glycerin f℥ss,
Aquam, ad f℥v,
M. ft. S.: fʒii as required.

This presents an Antispasmodic action and diffusible agents. If very severe give Opium separately, in Suppositories preferably, or as the Deodorized Tincture. Among inhalations we may mention Chloroform and Nitrite of Amyl. Belladonna or Atropia is valuable in Cardiac and Renal Asthma. In Renal we must avoid any remedy such as Opiates which would check Secretion. A minimum amount of Morphia with Atropia is valuable. *Externally.* Irritation by Dry Cups, Iodine, or Iodine and Croton Oil if there is much Congestion, followed by hot fomentations. Where Gastric Irritation is the cause, an emetic will break up the spell, and when there are large amounts of Mucus to be brought up. The Respiratory Muscles undergo partial paralysis, hence we give full doses of Nux Vomica and Strychnia, keeping up this for its tonic action.

In the Interval treat for Cardiac or Bright's Disease. It may be, only Tonic Regimen is required. Iodide of Potassium in long courses, Arsenic in moderate doses, and Tartar Emetic in minute doses, have an alterative effect on the mucous membrane and remove morbid susceptibility. In true asthmatics, change of climate is most potent, and in the young it alone may be successful. This change is controlled by personal idiosyncrasy. Large cities do well for some, North Colorado for others. Sound Hygiene and Regimen are required.

Atelactasis, or Pulmonary Collapse, is a Term applied to a retention of the Fœtal condition.

Carnification is where, from long pressure, air is driven out by a pleural effusion, and yet there is no inflammation. This is a good term.

Hypostatic Congestion *is a name applied to an important clinical condition of the Lung, affecting chiefly the postero-inferior parts, where there is Engorgement, with or without infiltration, determined by Gravitation and Cardiac failure.* It is seen in Low fevers and in Typhoid. The Lungs are purplish, heavy, very slightly crepitant, yet not hard. On section, bloody

serum, with bubbles of air, exudes. Compression removes it, and the Lung is not friable or softened. It is often mixed with Catarrhal Pneumonia or Bronchitis, Severe or Capillary, and we have the symptoms of Bronchitis. There may be more than Congestion. There may be a low form of Pneumonia and an Exudation. This is Hypostatic Pneumonia.

Causes. It occurs in weak, exhausted systems at the close of long diseases. It commonly follows Typhoid and Typhus, in the very old and very young.

Symptoms. Respiration is more embarrassed. The hue of the face is dusky. The Pulse is frequent and weak. There is impaired Resonance over the postero-inferior part of the Lung. Respiratory murmur is weak, and Sub-Crepitant rales are heard on inspiration. If the Hypostasis is slight, putting the patient erect and making him take long inspirations may remove it; the Crepitant Rale entirely disappearing from nervous exertion and pressure of the vesicles.

Prognosis. In any condition in which it occurs it adds danger, and is sometimes the cause of death.

Treatment is that of the disease which it accompanies. In Typhoid, it is due to a feeble condition of the heart. The tone of the branches of the Pneumo-Gastric going to the Lungs is lowered. Give Carbonate of Ammonium and Strychnia. The patient should not lie long in one position, Gravitation being a powerful factor. When the hypostasis is threatening and persistent, Electricity may be applied to the Respiratory Muscles.

Pneumonia. 1. Catarrhal. 2. Croupous.

Catarrhal Pneumonia affects a group of cells. Hence it has been called Lobular or Insular. From its association with Bronchitis, it has been termed Broncho-Pneumonia. It is an inflammation of the alveolar walls, with an exfoliation of their Epithelium. It involves scattered patches of Lung tissue on one or both sides, attended with a high grade of Mortality, occurring specially in the young and weak.

Morbid Anatomy. It does not involve a whole Lung, but there are Nodules of inflamed tissue. The wedges are broader at their apex than at the centre. The inflamed patch is hard and stands out. There is often a little Pleurisy over it. On incision it is red. On pressure, friable. Under the microscope we see that the exudation is in the vesicles, and consists of Epithelial Cells, coagulated fibrin and leucocytes. The cells are variously changed, and the walls are affected by morbid processes. The Bronchial Tubes are inflamed, and lesions of Bronchitis co-exist. The tubes contain Mucus and Muco-Pus of different degrees of tenacity. With this we find patches of Collapse. The collapsed patches are dark, swollen and sunken. When inflated with a blow-pipe, the collapsed areas are restored. As the disease progresses, under favorable circumstances the exudation slowly softens, and Expectoration takes place. The Cells cease to proliferate, and the lung returns to its natural state. This is termed Cure by *Slow Resolution*. But the inflamed patch may soften and form abscesses under the pleura looking like Small Pox, or the exudation dries up and becomes granular, and we have a *Chronic Induration*, with cheesy change in the Exudation. There may be the formation of Tuberculosis through absorption of Septic material.

Causes are those of Catarrhal Inflammation. 1. **Exposure** to damp and Cold when the system is run down. 2. **Age.** It occurs in the very old and in children. 3. A large proportion of cases are **Secondary** and connected with Measles, Typhoid, Whooping Cough, and Diphtheria. There may be very slight attacks. It may only be revealed at the Post-Mortem.

Symptoms in a **Mild Case.** We have **Moderate Fever** lasting for a few days which is generally higher in the morning. 101–5° F., or 102–5° F. Coated **Tongue.** Loss of Appetite. Heavy **Urine.** Some **pain** about the chest and **Cough** which is dry, severe, and bronchial. After a day or two there is **grey expectoration.** The Cough softens, and the expectoration becomes muco-purulent and then purulent. This may last fourteen days. If the lobules are few and but little affected, there would be no change in percussion or premitus. No blowing Sound. Perhaps a few spots of weakness and a few **Crackling Rales** which may only be heard on forcible expiration. If the patches are deep, as they often are, there are no physical signs. If the patient is not treated, the lesions extend and become unmistakable. Such attacks run into the distinctive changes of true Pulmonary Phthisis, and even Tuberculosis in those so disposed. A great many cases of Phthisis are of an inflammatory origin—slow Septic processes being set up.

True Catarrhal Pneumonia usually arises in the course of severe Bronchitis, but may arise primarily.

Symptoms. Respiration is very rapid. **Pulse** rapid and disposed to weakness. **Cough** becomes more frequent and painful, and there is less Expectoration. **Fever** is very high, and presents remissions between day and night. The **Skin** may be moist. The **Eyes** are often congested from the fever, circulation, and Cough. There is **Catarrh** of the Intestinal tract and discomfort about the Epigastrium. The **Tongue** is foul. The **Stools** are irregular, costive, or loose. There is not that Flush on the cheek which we observe in *Croupous Pneumonia.*

Physical Signs. Bronchitis has extended. Instead of Sonorous Rales, we have fine Sub-Crepitant Rales heard both on expiration and inspiration. Respiratory Murmur is weak, diffused, and blowing. Resonance is impaired, but there is not that flatness of Lobar Pneumonia. Vocal resonance has a Bronchophonic character. The consolidation is less extensive than in Croupous. In weak children we may have Collapse of the Lung.

In a few days **Nervous Symptoms** appear. There is broken sleep, slight delirium, constant jactation. The appearance grows worse; the **lips** livid; **features** pale. The **extremities** are cool, though the central Temperature is high. The **breathing** is rapid and shallow; the **pulse** running and feeble. The **heart** is labored in its action, and its sound is weak. The **skin** is moist. The Physical Signs indicate extending Capillary Bronchitis and passive filling of the Lungs. We have a paralytic engorgement, as in Pneumo-gastric palsy. Vitality fails and **Coma** ensues. The patient dies of prostration and impeded Circulation and Respiration. The **Duration** of a case depends on its extent and gravity. A fatal case lasts four to five days, or it may run on to three or four weeks. Death may occur on the twenty-first day.

Complications are not numerous. 1. **Collapse** is frequent. 2. **Heart Failure** from the prolonged High Temperature and interference with respiration. 3. **Albuminuria** is rare, and depends on the complication of Renal Catarrh. 4. **Gastro-intestinal trouble**—the mucous membrane sympathizing.

Diagnosis. The chief point is the recognition of the possibility of its occurrence in Bronchitis and Blood diseases. It may be mistaken for irregular Malarial or Typhoid fever, with Bronchial complications. Give the patient the benefit of the doubt.

Prognosis is very bad. From twenty-five per cent. to sixty per cent. die. The mortality, however, can be lessened if its onset is noticed and treated early.

Treatment is very unsatisfactory. It is difficult to lay down fixed rules. The indications are to relieve the Bronchitis, to maintain the circulation, to treat the stomach, and to favor resolution of the patches of exudation. As soon as its approach is discerned restrain the patient to bed. A mistake of two days may spoil the result. Put raw cotton around the chest, and over it Oil Silk. Adapt the diet to the stomach. In order to limit the fever give moderate amounts of Quinine, if the stomach bears them well; also Strychnia and Mineral Acids. Avoid all weakening and nauseating remedies. Muriate or Carbonate of Ammonia for children, should be administered in Emulsion or Simple Solution. If there is a tendency to Heart failure, stimulants are called for. Turpentine is a valuable alterative expectorant and diffusible stimulant. It may be combined with alcohol. The disease is too diffused for counter-irritation. Iodine may be used over the whole chest. In children where there is great retention of mucus, an emetic as Sulphate of Zinc, or Ipecac, may be used; but this should be avoided as far as possible.

Croupous Pneumonia is an acute febrile disease connected with an inflammation of the Substance of the Lung, involving a considerable extent in which an exudation rich in fibrin, and red globules occurs in the vesicles without affecting the walls. The exudation is composed largely of coagulated Fibrin. It resembles the False Membrane of Croup. We have four stages.

1. Congestion.
2. Red Hepatization or Consolidation.
3. Grey Hepatization or Softening.
4. Evacuation.

It terminates in Resolution, Abscess or Death. It usually affects the lower lobe of the Lung. It may involve only the posterior part of a lobe or may affect the whole lung. It may be double, and is then known as *Double Pneumonia.*

I. **Stage of Congestion.** The Lung is acutely congested and full of red blood. The vesicles have a little exudation in them.

II. **Stage of Red Hepatization.** The Lung is heavy. No air is admitted. It cuts like flesh on Section. If we press it with the blade of the knife a thick fluid comes out. It breaks down on pressure. If put into water it sinks. The exudation is from the blood vessels into the vesicles. It is composed of Globules, Leucocytes and a few Epithelial Cells.

III. **Stage of Grey Hepatization.** The Lung is pale. On section the granulations disappear. There is Softening, and the exudation is less tenacious than during the first stage. The lung has undergone fatty degeneration.

IV. **Stage of Evacuation** comes on when the exudation is partly absorbed and partly expectorated. An abscess may form. There may be Thrombi, and Necrosis or Gangrene result from obstruction to the circulation.

Nature and Causes. Some hold that Pneumonia is merely an Inflammation, others maintain that it is a Specific Disease. Pneumonia runs a definite course and terminates in a crisis, whereas, Inflammations generally subside gradually. In rare instances, it may follow violence, inhalations, etc., but this is not the case with Croupous Pneumonia. The peculiar distribution of Pneumonia does not accord with the Climatic changes which are believed to produce it. On the other hand, Specific diseases are Symmetrical and Bilateral in their manifestations, *e. g.*, Small-Pox, whereas Pneumonia is most frequently unilateral. Pneumonia does run a Specific course, but we find many variations. No positive opinion can be given. There is as much to be said in favor of one side as the other.

Causes. 1. Some assume a poison not yet separated. 2. Others, a Bacillus. 3. Others, the existence of a preparatory state of the system, *e. g.*, Depression of nerve force. 4. Sudden climatic changes, Wet, Cold, Damp, etc. 5. Age. It is more a disease of adult life; old persons are very prone to it, yet children often have it.

Varieties. Ordinary, Bilious, Cerebral, Malarial, Typhoid, and Secondary.

Ordinary. There is an abrupt onset, with **Chill**, followed by **pain in the side**, sharp and severe, from the association of Pleurisy. If there is less pleurisy, the pain is duller. It is increased by movement, pressure and coughing. There is a rapid **rise of Temperature.** It may reach 104° F. or 105° F., with only a moderate drop in the morning. At the close of the stadium it may drop 3° or 4° in twenty-four hours. The disease may gradually terminate by defervescence. The **Pulse** is not so great as to accord with the Temperature. It is 96–115. **Breathing** is very rapid and labored. The nostrils play. The alæ nasi move forcibly. The patient may have Orthopnœa. There is a great disproportion between the Respiratory and the Pulse rate. In an adult there may be 40, 48, 60 respirations per minute. Those of children may be 48, 72, or even 80. The ordinary ratio of Breathing to the Pulse is 18 to 72, or 1 to 4. Here it is 1 to 2, or even 1 to 1¾. The patient seems ill from the start. The **Expression** is troubled. The Countenance flushed. The **Flush** on the cheek is on the same side as the Lesion. We have a dry, painful **Cough**, with at first no sputa. Then we have a little tenacious, glassy sputum, which soon becomes specked with points of blood. It looks like Iron rust. Fibrin is being brought away. It is so sticky that everting the cup which contains it does not empty it. As the disease advances and consolidation takes place, the Cough may stop and the Sputa again be dry, or fresh parts may be attacked and blood specks be brought away the whole time. When the disease is at its close, the expectoration softens and becomes greyish. It ends in a soft muco-purulent fluid, and the Cough, at first hard and dry, becomes softer, looser and easier. **Nervous Symptoms** vary. Restlessness and wandering are common. The disease verges on a Typhoid type, with a tendency to twitching of the tendons, desire to leave the bed, muttering delirium. In children, when the upper lobe is involved, there may be active brain symptoms, followed by Coma. In children, Convulsions may occur at the onset or in the course of the disease. The **Tongue** is coated with yellow. There may be a little **Vomiting.** The **Bowels** are torpid, except there is Catarrh of the bowel, when there may be loose, bilious stools. The **Urine** is scanty, and has a heavy sediment, but *there is an entire absence of Chlorides*, Argentic Nitrate giving no precipitate.

Physical Signs of Pneumonia.

First Stage. Respiratory Murmur is feeble, partly from the pain caused by breathing. There is no change in Resonance or Fremitus. We hear a fine Inspiratory Murmur from the opening of vesicles coated with a fibrinous, sticky material.

Second Stage. The Lung is hepatized and travelled by open bronchial tubes. *Percussion* is very dull and follows the course of a lobe or a lobe and a half. It is uninfluenced by any change in position. Vibrations in the Bronchial tubes come through to the hand better than normally. Thus we get increased Vocal Resonance and Fremitus. *Auscultation* reveals pure Bronchial respiration. There are no Rales. The exudation is too solid for

air to break it up. The chest movements are restricted. There is no pushing away of the Liver, Heart or Stomach.

Third Stage. Grey Hepatization. There is the same Dullness on Percussion. Vocal Fremitus and Resonance are increased; but now we have Sub-Crepitant Rales, much coarser, larger and moister, heard both in expiration and inspiration.

Fourth Stage. The Dullness lessens, the Bronchial breathing softens, and gradually the Lung returns to its normal condition. The Physical Signs do not disappear as quickly after the crisis as the Constitutional Symptoms do.

Bilious Pneumonia. We have here a Complication of Gastro-Hepatic Catarrh. There may be little Jaundice with it. It occurs in the Tropics in the Spring and Fall.

Cerebral Pneumonia may simulate the symptoms of Meningitis. It is generally associated with apicial Pneumonia. It is common in children and those disposed to Phthisis.

Malarial is Pneumonia in a subject with Malarial Fever. A remittent or intermittent type is impressed on the Pneumonic Symptoms.

Typhoid Pneumonia is where the symptoms run into a Typhoid character. We have a marked prostration of the Nervous System. We find Flatulent distention of the bowel, Slipping down in bed, dry grey tongue, Muttering delirium. It occurs especially in the old and weak, or where there is some serious disorder of excretion at the same time, *e. g.*, Nephritis.

Secondary Pneumonia may occur in Typhoid and Rheumatic Fever. Diphtheria, etc.

Diagnosis. Croupous Pneumonia may be mistaken for

I. **Catarrhal.** We should remember the *abruptness* of Croupous; Catarrhal Pneumonia being preceded by Bronchitis. Croupous affects a whole Lobe. In Catarrhal Pneumonia the Lesions are scattered. Croupous runs a definite, Catarrhal, an indefinite course. Catarrhal is three times as fatal as Croupous. The Chlorides are not absent from the urine in Catarrhal Pneumonia. They are in Croupous. Sputa are present in Croupous, absent in Catarrhal. Physical Signs in Catarrhal are not well marked except when the patches coalesce.

II. **Pleurisy.** Pneumonia is more severe and the patient more ill. The alteration in the pulse is greater and the Fever higher. *Physical Signs.* In the First Stage of Pleurisy we hear a Friction Sound instead of the Fine Crepitant Rales of Pneumonia. In the Second Stage of Pleurisy, we have an enlarged chest, great difficulty of movement, and displacement of the Viscera. Effusion changes its place in Pleurisy. Vocal Fremitus and Resonance are weakened or lost.

Prognosis of Croupous Pneumonia is good. An adult gets well in 90 to 95 cases out of 100, if there is no complication. If the Pneumonia is Double or complicated with Pericarditis or Pleurisy, or if it occurs in drunkards or broken-down systems, and very aged people, it is very fatal. Yet, patients of 80 have recovered. Sometimes there is a tendency to Hyperpyrexia, *e. g.*, above 105° F. This may arise from the violent inflammatory acuteness of the disease, or from the morbid condition of the Nervous Centres. Hence, heat is retained and accumulated. It is a dangerous Complication.

Treatment. We do not follow any one plan. We speak of an ideal case, for which we can lay down certain rules. If we believe it to be a Specific Disease, we can only conduct our patient through its course. We can only break up an attack when there is Acute Congestion—not after that, *i. e.*, once Consolidation has set in. The patient should be seen early. If there is high arterial tension in a person of good health, Venæsection from the arm or copious Leeching to the side of the chest is advisable. This should be followed by the immediate application of a cotton jacket inside the shirt, with Mackintosh outside. Push Veratrum Viride and Aconite to the point of positively affecting the Volume Force and Frequency of the Pulse. We should get a Softening of the Pulse and a relaxation of the surface. Give Fluid Extract Veratrum Viride, gtt. iii–v every two hours; also Tincture of Aconite, gtt. iii. Moderate this the moment an impression begins to be produced, by lessening the dose and increasing the interval. There is a tendency to effusion into the Vesicles. Whether the nerves are palsied or not we do not know, but by checking the vis a tergo we stop the Exudation. Throw in full doses of Quinine. If the Stomach is irritable, give it per Rectum. If there is any absolute necessity give Quinine hypodermically. These measures, with absolute rest and rigidly restricted diet, may enable us to restore vitality to, and perhaps even cure a part of a lobe. The Digestive System must not be broken down. This treatment should not extend over two days. Then the area of Consolidation is known. The patient is now in for a siege of Fever and slow resolution. The treatment must now be directed to softening and hastening Resolution. Use at once Carbonate of Ammonia. It acts more quickly than the Muriate. Senega, Squills and Ipecac, nauseate. Give Carbonate of Ammonia, gr. v, or Muriate of Ammonia gr. vi–viii every two hours. Cough should be checked by Opium. This is also needed for Rest and Sleep. Do not mix it with the other medicine which is to be taken continuously. Quinine need only now be given in tonic doses, gr. vi–viii every three hours. Under the Cotton Jacket we may apply Tincture of Iodine. The diet should not be improved; give Milk, Broth, etc. Continue this until the crisis comes and the Febrile Stadium is passed. Under this treatment 90 per cent. to 94 per cent. of cases recover. The fewer the drugs the better.

Complications. In the very old and weak, and in children, we must avoid Venæsection. *Existing debility* contra-indicates Cardiac Sedatives. Use Aconite alone, as being more controllable. *Bilious symptoms* make it necessary to attend, for the first few days, to the Stomach. Give Calomel, Bismuth and Soda; Aconite by the mouth and Quinine per Rectum. Push the Calomel in fractional doses till three liquid stools are obtained. Then use it only when there is Hepatic trouble. There may be *Diarrhœa.* This must be checked by the continuous use of Opiates. Sometimes *Pain* in the side is so severe that we must apply a blister over the spot under the Cotton Jacket. Poultice, and follow it with a greasy rag. It is better to reserve Blisters for the later stages. *Nervous symptoms* are often alarming, the patient being restless and not able to sleep. The cautious use of graduated doses of Opium prevent their appearance. Sometimes, however, it seems to increase them. Then use the Bromide Salts and Chloral. The Bromide of Potash is best: dose, gr. xv, at intervals, or gr. x with gr. v of Chloral. An Enema of Chloral in active Nervous symptoms together with Stomach trouble, is good. For a child, gr. v.; an adult, gr. xv. If there is excessive *Hyper-Pyrexia,* we can scarcely hope to beat it down much. Our Remedies may increase it. If the Nervous symptoms are moderate, let the fever alone and go on with ordinary Treatment. In Pneumonia, Cold baths do not give favorable results. It is better to give colossal doses of Quinine, gr. xv, every three hours. Other drugs, notably Anti-Pyrene, have a wonderful effect, yet evidence so far does not enable us to say whether other results do not follow its use worse than the remaining Fever. The fever is only one Symptom of a complicated case. Cold applications to the head are good. A coil of rubber tubing with ice-water running through, ice bags, etc., may be left on several hours, and the effects watched.

Stimulants in Pneumonia. Alcohol is not required, but if it does not interfere with digestion, small amounts at short intervals with food, may be given to both old and young. Heart failure is thus less apt to occur. If there is marked weakness of the heart, the pulse weak and small, give first small and then large doses, to tide the patient over till the crisis comes to his relief. Children bear stimulants very well. Old persons require Wine Whey, Champagne, etc. Digitalis will suggest itself in connection with Heart failure. Give pretty full doses, with Ammonia Mixture and Quinine. We must not expect the same result on the Pulse as when Cardiac trouble is treated. Gtt. xii–xv of a good tincture, or fʒi–ii of the Infusion will be enough.

Pulmonary Phthisis *is a term applied to a varying and complex set of symptoms, viz.: Cough, Expectoration, Hemorrhage, Fever, Sweats and Emaciation, associated anatomically with Ulcerative or Suppurative changes in the Lungs, which have been infiltrated by a peculiar Inflammatory product.* The term Phthisis should not be applied to conditions till established organic disease of the Lungs exists. As to its nature views differ. It is mixed up with the obscure question of Tuberculosis. Some maintain that the areas of suppuration are areas of Tuberculous formation; but we have no definition of Tuberculosis. Some authorities, like Koch, say nothing is Tuberculous in which Bacilli are not found. Opinions differ as regards the action of Bacilli, as to whether they are a cause or an effect, or whether the product of Tuberculosis offers a favorable nidus for their development. We do know, however, that there are areas of Lung infiltrated, and involvement of the peri-bronchial sheaths and alveolar walls. A new form of Lymphoid Tissue developes and infiltrates the area; then there are proliferations of the cells, after which Bacilli are found. The affected areas may be like Millet seeds, or quite extensive retrograde changes occur. There is very little blood supply. Cheesey Metamorphosis, Softening and Ulceration ensue and in the cavities thus formed Suppuration is kept up. We first have Infiltration, and when the areas coalesce, Consolidation. The ulcers often communicate with the walls of the Bronchi, and these may soften and ulcerate. The blood vessels of the diseased portion of the Lung are unprotected, and Aneurisms may form on their weakened walls. The Lung may be riddled by these areas, or one Lobe may be hollowed out into a large cavity with fibrous partitions. *These changes begin at the Apex,* usually involving only one Lung at first. They are nearly always associated with Pleurisy.

Phthisis.

Chronic. 1. Catarrhal. 2. Fibroid.

Acute. Croupous, Cheesey Pneumonia, Infiltrated Tuberculosis.

In speaking of the varieties of Phthisis, we divide them clinically, and not according to the strict Pathology of each variety. *Catarrhal* is not necessarily a purely Catarrhal Inflammation. We have Tuberculous deposits in Catarrhal Products. So too in *Fibroid,* we find Tuberculous processes mixed with Fibroid products.

Acute is simply Phthisis running only a few weeks or months. It is often called Galloping Consumption. It is not to be confounded with Acute Miliary Tuberculosis. Croupous Pneumonia may run into Phthisis, softening, etc.

Causes of Phthisis. We clearly recognize a state of preparation sometimes **inherited.** To children a low form of Vitality is often transmitted, which renders them liable to phthisis. This state may also be **acquired** by all influences which depress the system. Early **youth** and early adolescence are times of formation. New tissue is being formed. Those who grow too fast and who are precocious, are peculiarly liable. It often follows **Impaired Digestion** and any exhausting **Drain** on the system. Those who are in this state get Phthisis from any **inflammation**. Where a subject has had old hard inflammatory products as scrofulous glands, **absorption** from these excites Phthisis. Some hold Phthisis to be **Contagious.** It may develop in a wife after the death of her husband from Phthisis, or in a mother after the death of the daughter, but such cases can be explained apart from Contagion. Whether it is contagious or not, is a momentous question, Clinically, Pathologically, and Socially. There are **Local** and **Climatic** Causes. Excessive Soil Moisture is a powerful agent. The character of the house and the ground on which it stands have a positive influence.

Symptoms are—1. Early. 2. Late. 3. Physical signs.

Chronic Catarrhal Phthisis. The **Early Symptoms** are paleness, impairment of appetite and nutrition, and **slow loss of flesh.** These may last for years before any Cough comes on. This is called the *Stage of Incipient Phthisis.* This is a bad term, as the phthisis may be broken up by proper means. Symptoms of Local Disease of the Lung may be called into play by a mere cold. The **Cough** is at first just slight and hacking. Then it becomes more troublesome. There is **pain** about the chest. The **Temperature** may rise one-half a degree in the afternoon. There is a slight **acceleration** of the Pulse. The **Tongue** is red at the edges and coated. **Digestion** is somewhat impaired. **Sleep** is disturbed, and the patient is restless. There may be a little **Moisture** at night. The patient **loses flesh**, gains a little, and then drops in weight. He becomes **pale**, and **flushes easily** in the cheek. The Temperature rises in the night, drops in the early hours of the morning, and rises in the afternoon. **Night Sweats** come on. The **Cough** is looser, and the **Expectoration** mucopurulent. The **Pulse** rises in rate, and the **Breathing** is accelerated. Not rarely the **Extremities** are cool, while the centre of the body is hot. There may be slight attacks of **Diarrhœa.**

The **Advanced Stage** comes on when a **Cavity** has formed, and round it are spots of disease in various stages. The **Temperature** is always elevated. It runs up high on slight causes. The patient gets out of breath very easily. The **Pulse** is small and rapid. The **Cough** changes its character and only comes on when the Cavity is full. There may only be a Coughing spell in the morning. **Hæmoptysis** may be small or copious. Digestion breaks down more and more. The appetite fails and **Diarrhœa** is set up by slight things.

Termination. The case ends in Tuberculous or Colliquative Diarrhœa. A patient may be cut off by a clot from sudden failure of the heart or by Dropsy.

The **Course** varies from one to fifteen years, the average being two or three. There may be many fluctuations, which may be associated with acute Catarrhal attacks. Generally they accompany serious organic changes.

Physical Signs. The Lesions of the **early stages** are generally found at the Apices of the Lungs, but not always. A patch may be even down below the root of the Lung. *Percussion* gives a slight relative impairment of Resonance. *Auscultation* shows that the Elasticity of the Lung is impaired. There is weak inspiration, prolonged and blowing expiration. Vocal Resonance is slightly increased. If the patient coughs, and then takes a long breath, there may be a few scattered, crackling Rales. The Infiltration progresses and we have the stage of **Consolidation.** *Percussion* shows marked Dullness. *Auscultation* reveals Bronchophony. We find both Increased Vocal Fremitus and Crackling Rales, because the process is not

uniform. Then comes the **Stage of Softening.** Over the area of Consolidation we now have moist Rales, which muffle the Bronchophony. Lastly we have the **Stage of Evacuation.** Cavities are formed, with Consolidation. On *Percussion* there is Tympany and the cracked pot sound. *Auscultation* gives Amphoric breathing. The *Rales* are large, mucous and bubbling. We hear Metallic Tinkling. The voice is pectoriloquous. In the stage of Consolidation and Softening there is Retraction of the Chest and Impaired Movement. The General Symptoms change more than the Local do.

Fibroid Phthisis differs from Catarrhal in its **longer duration,** and in the absence of acute Catarrhal Inflammatory Spells. There is **little fever** for months. There may be none. **Cough** is apt to be extreme and wearying. **Expectoration** is white and copious. **Hemorrhage** is by no means rare. **Digestive disturbances** and **Night Sweats** are not so common. The affected Lung has a large area. It undergoes **Contraction.** Cavities form round the centres of inflammation. The chest gradually retracts. The patient looks as if he had had Adhesive Pleurisy. Its mobility is much impaired.

Physical Signs. *Percussion* gives hard wooden Resonance, with areas of tympanitic Resonance. *Auscultation* reveals a diffused blowing sound, with here and there cavernous breathing. In spots the Pleura is so much thickened that transmission of fremitus is interfered with. Vocal Resonance is increased and pectoriloquous, or it may be decreased. Rales are heard in the dilated bronchi. The Pleura may be so much thickened—one-quarter to one-half inch—that the transmission of Fremitus is interfered with. Vocal Resonance is increased and pectoriloquous, or it may be decreased.

Acute Phthisis, or *Galloping Consumption,* is met with in Miliary Tuberculosis. We have an extensive Pneumonic infiltration, which takes on cheesey degeneration.

Symptoms are its **Duration**—from one and a half to three or four months; the **Course of the fever,** which is high and continued, marked at times by breaks. The **Breathing** is weak; the **Pulse** rapid. **Cough** may be very troublesome, or almost absent. **Expectoration** at times may be absent when the tubercles have not softened; again it may be copious. **Hemorrhage** may or may not be present.

Physical Signs, where the Lungs are studded with Tubercles, are obscure. *Percussion* reveals no dullness, *Vocal Fremitus* no change. The movements of the chest may be almost normal. *Respiratory Murmur* is altered and feeble. So many Lobules are obstructed that the amount of inspired air is small. There is consequently very little expansion. At times Vesicular Murmur may be shrill or hissing. Usually we have Crackling Rales at certain points, but the physical signs are out of proportion to the general symptoms of respiratory disturbance. When there is infiltration undergoing extensive changes we have signs of *Consolidation breaking down,* marked in either lung. Where the physical signs are very pronounced we have those of disseminated Tuberculosis.

Special Symptoms. Cough is extremely important. It varies at different times as the disease advances. Patients will often deny that they have a cough. On interrogation we find that they raise mucus. This may be brought up by a very slight effort. On the other hand, Cough may be a most prominent symptom, and the amount of mucus raised be very small. Of course it is right that what pus is formed should be brought up. Cough for the removal of pus must not be checked, but a cough which wearies the patient, and is fruitless, must be stopped. As the disease advances cough may only occur in spells, *i. e.*, when the cavities are to be evacuated. Frequently the cough is aggravated by irritation from the larynx and pharynx. Troublesome cough helps to break a patient down rapidly. Sometimes we meet with cough which excites **Vomiting.** Patients will insist that it is a stomach cough. The stomach demands careful treatment, which will be followed by improvement in the cough. In the same way **Expectoration** should be studied carefully. In the *First* stage there is scarcely any. When softening begins it is muco-purulent, and finally becomes purulent. Expectoration may be absent. There may be extensive rales, and no mucus raised. In other cases, with small physical signs, there may be bronchial secretion in excess and copious expectoration. The sputa assumes what is known as the nummular form, solid, flat, heavy, round masses, which sink in water. This is more particularly met with in the later stages, when there is disintegration of Tissue. The Sputa of Phthisis have acquired an importance. The study of them after boiling with Potash is significant. The elastic tissue of the lung resists the action of the alkali, and its presence proves that the walls of the alveoli are undergoing disintegration. This diagnoses the case from chronic bronchitis. The presence of bacilli has a diagnostic value. In proportion to their number and growth is the progress and bad character of the phthisis. **Hemorrhage** repays careful study. It is a frequent symptom. Few cases go on without it. Some few do. Some bleed often and freely. The hæmoptysis is easily recognized as coming from the Lungs by the character of the blood raised. It does not come up in gulps, like vomiting, but the mouth fills, and it is quietly spit out. The amount raised is generally very small. The Blood is arterial, fully oxidized, and frothy. Crimson froth lies on the top of the mucus. The amount is always exaggerated. The mere amount rarely does harm. It indicates some fresh disease, which may result in more sputa and fever. It does no injury at the time. It comes from congestion around a spot already congested. This may occur at any period of phthisis, or the hemorrhage may arise from weakness of little pockets. Hemorrhages of these two kinds are followed by relief, especially the latter kind, after a hard, racking cough and fever. The patient feels better, the appetite returns, and the fever improves. In many cases of phthisis which bleed easily during the first stage the progress is good, and the case is slow and amenable to treatment, and the lesions do not advance rapidly. The vessels relieve themselves by hemorrhage, and not by exudation, which would fill up the lung and cause more disturbance. Other kinds of Hemorrhage may be dangerous. **Small Aneurisms** often form on the blood vessels along the walls, and cause death by bursting. Some blood stays, and if the lung is irritable, we have a sub-acute pneumonic condition set up. The Question arises, Can hemorrhage start phthisis itself? While it is true that hemorrhage from the Lung indicates organic disease, in a person strongly disposed to phthisis a blow on the chest may cause hemorrhage and set up phthisis. People may have bronchial hemorrhage, in which lung tissue is not involved. It may come from the Larynx or Bronchial tubes. Their Mucous Membrane is thin, and the vessels break easily. Congestion following changes in atmospheric pressure may cause hemorrhage. In general, however, it is a symptom of evil omen.

Pulse Rate is often accelerated before the physical signs are manifest. A continued acceleration and hacking cough justifies serious apprehension and radical measures. The absence of acceleration of the Pulse and elevation of Temperature is a very favorable symptom in phthisis. It means that Reflex Irritability is not as great as usual; and, secondly, by the tendency to absorption of Septic material is not prominent.

Body weight should be studied carefully and regularly. When we add to elevation of Temperature and acceleration of pulse, body weight declining, and a little hacking cough, we have dangerous symptoms. Nothing is more favorable than to find the body weight keeping equal.

Diagnosis of Phthisis is easy with care. We might confound it with *Chronic Bronchitis* or *Chronic Catarrhal Pneumonia.* From **Chronic Bronchitis** we would diagnose it thus: The symptoms of Phthisis indicate *greater constitutional disturbance.* There is more weakness, fever, anæmia, Indigestion, Diarrhœa, Dyspepsia, etc., Night sweats and headache. Still with a large amount of Purulent Discharge and dilated bronchi, there may be the above symptoms. *Physical signs* are more reliable. There is *no consolidation* in bronchitis, but *dilated bronchi and Emphysema. Percussion Resonance* is hardly affected, and may be exaggerated in Bronchitis. In Bronchitis, *Vesicular Murmur* is unchanged, and there may be *diffused blowing sound* from general bronchial dilatation. In Bronchitis, we have feeble, inspiratory, and prolonged expiratory murmur. These are in both Lungs and diffused, but in Phthisis, it may be one-sided, or only in one spot. Hence, *Localization* is an important point. At one part there may be evidences of infiltration, Cavernous breathing, and change in vocal resonance.

Rales in Chronic Bronchitis are *Sibilant.* In Phthisis they are at first *Crackling*, and in consolidation there are none. Again, they may be mucous, then bubbling, and then limited to one spot and spreading gradually from it. If we have a case of phthisis where there are small centres of disease not running together to give consolidation to any extent, it may closely resemble Chronic Bronchitis. In the Diagnosis Elastic fibre and bacilli must be sought for. A very Important question is *Recognition in the Early Stage.* We may think it is only dyspepsia, anæmia, Malaria, and thus explain away the Symptoms. We diagnose by considering the *Hereditary* Tendency or evident acquired *Constitutional weakness*, *Family history*, *age*, *Loss of flesh*, *Acceleration of Pulse*, *Temperature*, *Hacking cough*, and then if there is repeated and critical examination of the chest, and it shows change at any point, though we cannot diagnose phthisis, we should keep the patient under observation and treat him carefully. This is the stage for Radical cure. After catarrhal pneumonia, minute areas remain, which may run into phthisis. We find a little *impairment of Percussion Resonance* after a coughing spell. On deep inspiration we may hear slight *Rales.*

Prognosis varies enormously in different stages. It is fairly good in the very early stage if we can secure full control of the patient. After this, the Prognosis is bad. Life may be prolonged, but eventually the disease wears the patient out. Yet, even after positive Lesions are found, the Prognosis is not necessarily wholly bad. Consider—1. The Family History. 2. The Extent of the Lesion. Existence of any disease on the opposite side is very bad. A case is always worse if bilateral as indicating a tendency to Generalization. If the Stomach remains unimpaired, the patient can fight for a long time. *Pecuniary means* are of great service. Occupation, Climate, Mode of Life, must be changed, and all depressing circumstances avoided.

Treatment of Phthisis. The most important part of the Treatment is **Prevention**, which should be both Individual and Municipal. Sanitary reform is needed in the Ventilation of *Factories.* Marriages should be prevented between phthisical persons, or coitus and conception prohibited. In the early stage health may be entirely restored. The Subject must be brought into physical vigor. Drugs should only be used as nutritives, or to check functional disturbances. We must recommend pulmonary Proper gymnastics, and teach our patients to use the deeper parts of their Lungs, and to cultivate abdominal breathing.

Drugs when used at all, should be adapted to the promotion of Secretion, and Digestion, and to give tone to the system. Cod Liver Oil, Hyposphites, Iron, are all serviceable.

Fully Developed Stage. Consider the tone of the patient, whether—1, to use a cautious conservative plan; or, 2, whether he is the stronger or the disease. If he is too weak for the above, let him either change his climate or start a protective plan. Rest in bed determined by his weight and temperature, In-door exercise, Marriage, Artificial Feeding. Guard against Changes of Temperature. Use baths, gradually cooler and cooler, and friction. Insist on Out-door exercise. Stop his occupation, *i. e.*, break the conditions which have led to the disease. Very often Phthisis will yield entirely to Gastric Treatment, by studying the Digestion and the Diet. Often the appetite is capricious. Here give acceptable food. Guard against the least tendency to diarrhœa.

Cough is the patient's chief complaint. As a matter of fact, this is of no value. If it is fruitless and dry, we should attend to the Larynx and Fauces. Avoid Expectorants which are laxative and irritate the stomach, and use the simplest things. For Cough we give the following—

℞ Morphiæ Sulphatis gr. i,
Acidi Sulphuric Diluti, fʒii,
Syrup Pruni Vergin, f℥iv.
M. ft. S. A Teaspoonful in water two or three times a day.

Or, instead of Morphia, we can use—

℞ Potass. Cyanid, gr. iii,
Acid. Muriatic Diluti, fʒii,
Glycerin, f℥ss,
Syr. Pruni, Vergin : f℥iss,
Syrup Scillæ, q. s. ad, f℥iii.
M. ft. Sign: A Teaspoonful in water two or three times a day.

Avoid Expectorants in Phthisis. Mixtures of Senega, Squill, Tolu, etc., nauseate the patient.

Night Sweats. We should endeavor to remove the cause by stopping Meat food and lessening the bed clothes, etc. Sometimes they depend on the irritation of the fever. Here give Atropia, $\frac{1}{120}$ to $\frac{1}{100}$ gr., or join with the former prescriptions gtt x or xv of Aromatic Sulphuric Acid two or three times a day, or Gallic Acid 3 gr. and Quinia 2 gr., three or four times a day. Jaborandi in minute doses will tone up the Sweat glands, given in doses of gtt v three times a day. So will Sponging with Whiskey and Alum, or Alcohol, and rubbing with a dry salt towel. Change to a dry climate often breaks up Night Sweats.

Hæmoptysis need not excite solicitude. Huge doses of drugs to check it break the digestion down. Prescribe cool air in the bed-room, rest, a little Opium to tranquillize circulation, and a few drops of Ergot or Gallic Acid. If the stomach is irritable, give Ergot by hypodermic injections over the affected part or in suppository. Forbid all excitement. Digitalis is valuable as sustaining the heart's action and being itself an astringent. In cases of protracted Hemorrhage we may use Inhalations of Salts of Iron and Zinc by an atomizer. Do not push Opium too far. If Ergot does not stop the Hemorrhage within forty-eight or seventy-two hours, substitute Gallic Acid or Lead Acetate. Give Lead Acetate in gr. iii doses every three hours, and watch for Lead poisoning. In unusually protracted cases, Sulphate of Copper, gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$ does good, and so will dry Sulphate of Iron. The

application of Ice over the Chest should only be given when large amounts of blood are being lost and where we want a powerful result.

Fever. A moderate amount is to be expected. Apyretic cases are moderate. We can't get rid of it. It improves with the system, but sometimes may be exhausting. It may be associated with night sweats, and checking the fever may stop them as well. Keep the patient very quiet and restrict his diet. The effect should be prompt. We can't keep them in or on poor diet too long. Then give remedies, such as Quinia, Digitalis, Opium and Belladonna. Niemeyer's pills are as follows:

℞ Quiniæ Sulphatis gr. xl,
Pulv. Digitalis. gr. x,
Pulv. Opii gr. iii,
Extract Belladonnæ gr. iiss.
Mft. Pil. xx. S. One three times a day.

Break down the fever with Aconite in five doses of one drop each, or Antipyrene, x or xii grains each, during the evening and afternoon. Sometimes patients bear fever well and may go out with a temperature of 103° F. or 104° F., but we have rapid wasting of Tissue all the time. It shows a more intense infection of the system. Give Opium and Quinine to check it. We can't *stop* it, and other remedies only do harm. Don't give too many drugs. Only give them to meet special emergencies. Combine Extract of Malt, Cod Liver Oil, etc., with the food. *Change of Climate.* Sometimes—1. It is desirable to bring about a radical change in general state of of the System. 2. It may be required for relief of some special symptom. 3. Simply for Euthanasia. Mere change of climate will lose its effect if the patients don't keep up same treatment as before. Forced Artificial Feeding has been recommended, but is no good. Rest, massage, and forced feeding may be good in a very simple case. Atmospheres of different densities and medicated seem to give some help.

Local Treatment. Inhalations or Hypodermic injections into the diseased lung, are good where the disease is circumscribed, and there is a good deal of irritable coughing.

THE PLEURA.

Pleurisy is an Inflammation of the Pleural Membrane, which invests the Chest and covers the Lungs and Pericardium. It is a Serous Membrane, forming two closed sacks. We may consider it under the two forms of *Acute* and *Chronic.* Anatomically we consider—1. *Plastic Pleurisy.* 2. *Pleurisy with Effusion.* We may further regard it under the two heads of—1. *General;* and 2. *Local Pleurisy.* Of the latter *Diaphragmatic* is a very interesting form. Under Special Forms we consider

1. Idiopathic.
2. Traumatic.
3. Rheumatic.
4. Latent.
5. Tuberculous.
6. Cancerous; and
7. Secondary.

Acute Pleurisy may affect one or both sides. Sometimes the First Stage is followed by Plastic formation. There may be hardly any Serum. The whole Lung may be covered with plastic lymph, and present a reticulated appearance, with layers of false membrane. This lymph organizes, new vessels form in it, and we have what is known as *Organized Lymph.*

The layer may be one-qurter of an inch in thickness. Sometimes we have a large amount of yellow Serum, with little flocculi floating in it. It may fill the chest. The Lung is squeezed flat and the heart pushed to one side, or only two lobes may be compressed in the right lung, while the upper may resist the effusion.

Encysted Pleurisy. The adhesions form partitions. In cases where the Diaphragm is bound to the under surface, the anterior margin of the Lung may come entirely around the Diaphraghm. Sometimes the effusion is so rich in lymph that pockets are formed all through the Lung. The effusion may be purulent from the beginning, or at first serous, and then the Pleurisy be converted into an Emphyema. After pleurisy has existed some time, if only a moderate amount of Lymph has been exuded, the Lung absorbs it, and the case recovers; but if the Lung has been matted in the chest is drawn in, and we have the Deformity known as Retraction. Still worse is Purulent Effusion where a large collection of Pus has escaped. The Lung cannot expand, and we have permanent alterations, forming permanent inability to expand the Lung.

Causes. 1. *Atmospheric Changes.* Exposure to Changes of Temperature. 2. It often follows blows, bruises, wounds, etc. This is *Traumatic.* 3. When it develops in Rheumatism, it is known as *Rheumatic.* 4. It may come from so slight a degree of Inflammation that it is *Latent.* 5. The development of a Neoplasm or Carcinoma or Sarcoma, gives rise to *Cancerous.* 6. In Scarlet Fever, Pyæmia, etc., we have *Secondary* Pleurisy, and also in Bright's Disease.

I. **Simple Acute Pleurisy** with Effusion.

Symptoms. There may be slight **Rigor** followed by moderate **fever** 102° F. to 103° F. Sharp Stabbing **Pain** in the side which is increased by moving, coughing, etc. It has given rise to the name Pleuritic Stitch. The **Breathing** is interfered with—is jerking and somewhat rapid. It is **confined to one side.** Constitutional Symptoms are Slight. The patient neither looks nor feels very ill. In reclining, he leans to the Injured Side. As the disease advances, the patient has less pain and lies on the Affected Side. The Effusion has occurred and separated the two layers of the Pleura. These layers do not rub against each other. In the first stage, *Auscultation* gives a dry brushing, Crackling, Superficial Friction sound, attended with sharp pain. *Vesicular Murmur* is impaired. In twenty-four hours, we may have *signs of liquid Effusion.* The *Chest* is enlarged. The *Movement* is exaggerated on the healthy side. *Expansion* is reduced over the affected spot. The intercostal spaces are prominent. Percussion gives a flat note over the affected area. This dullness varies with position. If the effusion is only moderate, instead of finding, as in Pneumonia, an oblique line corresponding to a lobe of the Lung, we have a wavy "S" shaped curve, or generally it is horizontal. We have Flatness which varies with Position, and rises from the base. The upper line is horizontal. *Vocal Fremitus* is impaired or lost. *Vocal Resonance* is Feeble or Absent.

Fully Developed Stage. The affected side is filled entirely with the Effusion. The semi-circumference of the affected side, from the sternum to the Spine, is increased. The Intercostal Muscles are paralyzed, and the Intercostal Spaces are prominent. *Percussion* is Flat from base to apex. On the other side the *Vesicular Murmur* is Exaggerated. Now the Pleural Cavities are full, and change of position has no effect. The adjoining Viscera are displaced. On *Auscultation* there may be no breath sounds. There is much Dyspnœa, and with this we may have Tracheal Sniffling. Over Extreme Effusion we may hear a distinct sniffle, which may make us think it

is Bronchophony under our ear. Cases have been treated for Consolidation owing to this. If the patient breathes softly, we see there are no voice sounds at all. Vocal *Fremitus* is gone, and *Resonance* is feeble. The *Duration* of the stage of increased Effusion closes in ten to fifteen days; then it is absorbed if it is serous. If the fluid has been purulent, there is no Absorption. If Absorption takes place the Fever declines. The Pulse is slower, and the Breathing easier. During the stage of large Effusion there has been no pain; now there is slight pain. The Viscera return to their Normal position, the size of the Chest is reduced, the line of Dullness fails, the Vesicular murmur returns, and we have a returning Friction Sound where the Costal and Visceral layers are rubbed together. Transmission of Voice is wholly abolished in Empyema, not entirely in Hydrothorax. Vocal Resonance gauges the progress of the Effusion. Where the Lung is partially Collapsed, we have coming through the thin layer of liquid a bleating, quavering sound called Aigophony. It is peculiar to the period when there is a thin layer of fluid. It is best caught over the Inter-Scapular region. The *stage of Absorption* lasts a week or ten days in favorable cases, but generally longer. It may run into a Chronic state and not be absorbed. These cases of Pleurisy are modified by the various forms mentioned above. We may have a considerable Effusion which is locked up in a sack and has a false membrane around it. This is *Cystic Pleurisy*. The general symptoms will not be Severe, for there cannot be much Effusion, but Physical Signs are modified. 1. The upper line of Dullness is not horizontal, but follows the shape of the sack. 2. The Area of Dullness is not changed by position. Where we have a *Multilocular Pleurisy* we have pockets, uniformly small, with Serum in them. We notice that the amount of Serum is small. 1. The Side is not swollen; and 2. The adjoining Viscera are Undisturbed. 3. The Area of Dullness is irregular. 4. It is not influenced by change of position. 5. There is Flatness on percussion and Feebleness of Vocal Resonance and Fremitus, but they are not so entirely absent as in a large Effusion. 6. Vesicular Murmur is often feeble. 7. We have a transmitted Blowing Sound.

The **Duration** of Encysted and Multilocular Pleurisy is uncertain. They are both Unfavorable to Absorption. In them we find an easy transition to

Plastic Pleurisy. Here we have the same General Symptoms, but the Area of Dullness is very irregular. We have a patch of Plastic Pleurisy, irregular in size and shape. There is much more persistent Crackling Friction. There is only Modified Dullness, not Flatness. Rarely is there great Dullness. *Vocal Fremitus and Resonance* are not wholly lost, but of course they are impaired. *Respiratory Murmur* can be heard as a Weak, Blowing Sound. There is often associated with Plastic Pleurisy a slight Pneumonia of the Lung. Then there is Bronchial Breathing over such an Area, and the Vocal Resonance, as it comes to the ear, will be modified in character. The Course of Plastic Pleurisy is slow.

Diaphragmatic is where the effusion is caught within the Diaphragm and base of the Lung. The **Pain** is extreme and referred to the base of the Chest and Diaphragm. It is associated with extreme **Spasm of the Diaphragm.** It seems as if the patient would die of Suffocation. **Hiccough** is a most distressing Symptom. It may last ninety-six hours. The patient cannot sleep. The **Heart** may not be displaced, but its **action** is disordered in an unusual degree. The Inflammation may extend to the Vena Cava where that vessel passes through the Crura, and then we have "Milk Leg."

Physical Signs. If the Lung is entirely held down the effusion is concealed. There is no expansion. There is moderate displacement of the

Heart, and Lowering of the Liver and Diaphragm. There may be no Dullness on Percussion, as the Lung covers the effusion. There is no Friction Sound. There may be just a little relative Dullness. Vesicular Murmur may be present down to the Diaphragm. This is often overlooked. If the effusion involves part of the Costal Pleura we can get at the effusion.

Purulent Pleurisy. The differences are rather in the General Symptoms than in the Physical signs. The Physical signs are pretty much the same as in Encysted Pleurisy. The Pus may be free to move, or be in a pocket. We recognize Pus by the **General Symptoms.** 1. The **Fever** does not subside; it progresses, and rises higher and higher; is hectic in type. 2. We have sweats at night. 3. The patient wastes; is weak and sallow. 4. The Breath is sweetish and pyæmic in odor. These symptoms may come on any time.

Diagnosis of Acute Pleurisy. We must Distinguish—1. **Myalgia** of the Muscles of the chest Walls. The Patient is in pain, bends over, holds his side, etc. The Pain is increased by a Cough, by Movement, and by Breathing, but there is *little Fever.* The *Pulse* is not so frequent. On Auscultation there is *no friction sound.* There is no effusion to produce Dullness. Watch for a day and no Effusion occurs. 2. **Pneumonia.** There is more Chill; more abrupt rise of Temperature; more disturbance of breathing; more flushing of the face. There is Crepitus on inspiration only, while the friction of Pleurisy is heard both on expiration and Inspiration. Yet, we sometimes cannot distinguish Crepitus from Friction Sound. In Consolidation of Pneumonia, dullness follows a lobe of the Lung. Over the effusion we have a horizontal or (in case of Encysted Pleurisy) an irregular line of Dullness which changes with position. There is absence of Resonance or great weakness of Vocal Fremitus over the Effusion. When the Effusion fills the whole Chest and there is a transmitted sniffle, we might be misled. But we consider, the—

1. Absence of Vocal Fremitus.
2. Displacement of the Viscera.
3. Enlargement of the Chest.
4. Disappearance of Intercostal Spaces.

These points Pneumonia cannot imitate. However, *Multilocular Pleurisy and Encysted Pleurisy* are more difficult. There is weakness of Respiratory Murmur as contrasted with the Broncophony, and Dullness is irregular, as compared with the regular lobar form of Pneumonia. In Pleurisy, there is an absence of Expectoration and no rusty Sputa. In order to make sure of our Diagnosis, we can use the exploratory needle. It does not hurt to run a needle into a Consolidated Lung; therefore, we can use a Capillary needle and get enough fluid to satisfy our Diagnosis.

The **Prognosis** of Acute Pleurisy is very good. In the encysted form it is doubtful as to duration. In the Multilocular Form it is doubtful. Sometimes cases die from exhaustion if the amount of effusion is great. Acute Purulent Pleurisy is always dangerous. Our Prognosis should therefore be guarded.

Treatment. Absolute rest in bed and protection of the surface. Restrict the diet. The disease is not wasting. The danger lies in the amount of the effusion. Give very little liquid. Venæsection is *never* needed. In vigorous persons, where the patient is in very great pain, it might be advantageous, but generally local depletion by leeches or wet cups is sufficient. Then envelop the chest with cotton, oiled silk and Mackintosh. This must be arranged so that we can get careful Physical Examination every day. Opium is needed to relieve pain. Give hypodermic injections of

Morphia, with or without Atropia. We may administer Calomel, Opium and Digitalis for several days during the formation of the effusion. When it is clear that an effusion is formed stop this and use Alterative treatment. Iodide of Potassium with Digitalis, Acetate of Potash and Digitalis, or Iodide of Potassium and Jaborandi in the intervals; not enough, however, to produce Sweating. When the effusion is very large put on a Cantharides Blister 5x5, and let it "draw." Prick it and withdraw the Serum, and in ten days repeat it. This will generally bring an acute case to an end in three weeks. If the Pleurisy is plastic continue Calomel; then Iodide of Potassium alone. Use smaller and smaller and more frequent Blisters. With Iodide of Potassium you may join Bichloride of Mercury, after stopping the mild Chloride. If you suspect Pus, puncture and aspirate at once. If Pus remains, bands are formed and a Pneumo-thorax may be produced. If Effusion increases in spite of treatment, distends the Chest, and displaces the Viscera, we may have sudden failure of the Heart. Therefore the existence of large Effusion, whether Serum or Pus, demands withdrawal. Sometimes the patient has Paroxysms of Dyspnœa, owing to encroachment on the Aorta, or from some Nerve being influenced. Operate at once in this case. If Effusion has been a long time, and will not go away in five or six weeks, then operate. All this time the Membrane is getting thicker and thicker, layers of plastic lymph are more numerous, and expansion will not be regained.

Chronic Pleural Effusion. Hydrothorax is a term applied to a Watery Effusion where there is scarcely any inflammation. It is applied to a passive Dropsy in the Chest, connected with Heart and Kidney disease. Sometimes we have a Serous Effusion from a slight affection of the Pleura without inflammation. An acute case of Serous Effusion may not terminate in Absorption. Generally we get Pus, or, in other words, an Empyema. We meet with Chronic Pleurisy where Treatment has been faulty, and where there have been several attacks. Where the Patient's constitution is poor, or where we have a Tubercular Diathesis, Pleurisy may be secondary to Tuberculosis. The Effusion in Cancerous Pleurisy is apt to be blood-stained. The Effusion in Chronic Pleurisy may be free to move or encysted.

Symptoms. 1. It may be Latent. It comes on insidiously. The patient gets tired from breathing. He may not even mention his Chest when he calls for medical aid, though the heart may be pushed to one side. People have fallen dead with the Chest filled to the Clavicle, yet never suspected it. While the symptoms are thus latent the **Physical Signs** are demonstrable: 1. The Affected Side is Enlarged. 2. The Intercostal Spaces are filled out. 3. Respiratory movements are abolished. There is, 4. Shifting Flatness. 5. Absence of Resonance and Fremitus. 6. The Viscera are nearly always pushed to one side in Chronic Pleural Effusion. The **General Symptoms** are well marked: 1. There is **Shortness of Breath.** 2. **Pain** on the affected side. 3. **Inability to lie** on the opposite side. 4. Dry **Cough** increased on talking or movement. 5. Some **Fever**, which is moderate in Serous, but Hectic and considerable in Purulent Effusion. 6. **Failure** in health, strength and color. 7. If the effusion has been long, **œdema of the feet** may come on from Heart Failure. We judge of the nature of the effusion by the amount and character of the Fever. Where there is Pus of long standing, the thoracic wall is œdematous. There is apt to be more severe pain and tenderness on pressure. Use the exploratory needle.

The **Course** of the Case depends on the character of the effusion and on the condition of the chest. If the effusion is *Serous*, it may remain indefinitely. If *Pus*, it discharges itself by opening into the Bronchial tubes or by an external Fistula. It may be vomited by the Œsophagus or perforate the Diaphragm. If the Lung is diseased, sometimes the effusion compresses it, and putting it at rest, has retarded the advance of the lesions. Hence we may be reluctant to disturb an effusion where the Lung is diseased.

Diagnosis. It may be difficult to diagnose a Circumscribed effusion close to the Liver. We may mistake it for *enlarged Liver.* The history of the case, the conformation or otherwise of the Dullness to the shape of the Liver, the exploratory puncture, etc., will settle it. Sometimes it simulates *Pericardial enlargement.* However, a careful study of the Apex beat, the character of the Breath sounds, Dullness, etc., will set us right.

Prognosis of Chronic Effusion if serous, is serious; if Purulent, is dangerous. In Cancerous and Tuberculous pleural effusion, it is hopeless.

Treatment. In Acute Pleurisy with effusion, even if it be Serous, and has lasted a long time, operate, *i. e.*, where it has gone on for five or six weeks. Sometimes, of course, the symptoms demand early withdrawal of liquid. Put on a blister of Turpentine and confine the patient to bed. Give Iodide of Potassium and Digitalis, also a few sweats with Jaborandi, order rest and restricted Diet. If Phthisis is present, of course, give nothing to reduce the strength. If you have given a fair trial and no good results have followed, then perform Paracentesis. Paracentesis is usually performed by an Aspirator. If the Apparatus be dirty, it may turn a serous into a purulent effusion. Sometimes we have to tap five or six times before final absorption takes place. Stop instantly when cough comes on, and the patient catches his breath. Do not be too anxious to obtain every drop of the fluid. After two or three tappings, if Pus still returns, pull out the Trochar and insert an India Rubber tube. Do this under Antiseptic Spray. Dress with Antiseptic Gauze, and outside put Mackintosh not only for the exclusion of Septic Material, but it enables Pus to be expelled with expiration, and no air can get in with inspiration through the Mackintosh. As the Lung expands towards the chest, withdraw the Rubber gradually and cut some off. In children, owing to the amount of Lymph and the thinness of the chest walls, we may have Retraction and Curvature of the spine. This will rectify itself in later years. Sometimes Secretion will not stop in Adults. Cutting out pieces of the Ribs so that the side caves in, has been tried, but this is an extreme measure. The best place for operation is outside of the Angle of the Scapula and as far down as we can without injuring the Diaphragm. The General Health of the Patient requires care. Tonics, Alteratives, Nutrients, etc., must be given. In Chronic Disease, as Bright's, we must remove the effusion. In organic Heart disease and Kidney disease, we, of course, keep up their own specific treatment. In Tuberculous Disease, complicated with Pleurisy, Operative Meddling avails but little.

Pneumo-thorax. This condition is connected with Chronic Pleurisy.

The **Morbid Anatomy** is Simple. It may be general or restricted to a very small area by bands of organized lymph. Pneumo-thorax often exists before Pleuritis, this being from an Empyema. An Empyema may burst into the Bronchi and air get into the Pleural Sack. Pneumo-thorax *is a condition in which there is Pus and air in the Cavity of the Pleura.* The Pleural Membrane presents symptoms of Inflammation, and with the Lymph we find an effusion of either Pus or Pus and Serum. The Lung is either totally collapsed or only one Lobe may be. If air has come from an ulcerated opening in the Pulmonary Pleura, a Fistula is found. In order to detect this condition, put a tube into the Trachea and blow into it, we find bubbles coming out of the Pleura and the point of injury is known. The adjacent viscera are displaced and the Diaphragm is pushed downwards.

Thrush - is a parasitic disease due to the bacteria Oidium Albicans which are of a pure white color. Thrush leaves fine dotted white spots in the mouth &c. The predisposing cause of thrush is catarrhal stomatitis.

Treatment: - destroy the parasite & cure the catarrh. to kill the parasi use $HgCl_2$, Sulphurous acid &c.

Causes. 1. **Wounds** of the Chest. 2. A **Fistula** from an Empyema opening outside. 3. **Rupture** of the Pleura and the establishment of a Pulmonary Fistula. 4. It may come on in Phthisis where **Sub-Pleural abscesses** have formed and perforate. Phthisis would be a common cause for it, were it not for the adhesions formed between the Lung and Chest wall.

Symptoms are those of a large Pleural Effusion of any kind. Dyspnœa, pain in the Chest, Cough, without expectoration, coming on suddenly. *Physical Signs.* Distension on the affected side. The Intercostal Spaces are filled out. Displacement of adjoining viscera, especially the heart. There is altered or absent respiratory movement. *Percussion* gives very large tympanitic Resonance and Amphoric Sound, either circumscribed or general. *Auscultation* shows complete absence of breath sounds. There is no respiratory murmur. But where we have a Pulmonary Fistula we have tubular Blowing and amphoric Breathing. If the hole is large, we may have large Cavernous breathing, and with this Rales and also *Metallic Tinkling*, caused by drops of Pus falling on the liquid below. The Rales are peculiar which are heard chiefly in this affection. If we sway the Trunk abruptly, we have a "succussion splash" which is characteristic. *Vocal Fremitus* and *Resonance* are lost. Only when we have a very large opening would we have Amphoric resonance. When Pneumo-thorax reaches a high degree, we have displacement of the Heart, with resulting Cyanosis, with Orthopnœa and feeble pulse.

Diagnosis is simple if the condition is not complicated with something else. The only trouble in Diagnosis is in Circumscribed Pneumo-thorax, especially on the left side. It may simulate *Dilated Stomach.* The tympanitic note is hard to distinguish. In the Stomach we may have drops from the œsophagus falling on the liquid in the stomach. But the History of the case clears the matter up. There is here a history of Gastric symptoms. A very careful study will show that the quality of the tympany changes as we go from the Pneumo-thorax to the stomach. In the stomach the Resonance is the same throughout. Again, in Pneumo-thorax the tympany does not follow the shape of the stomach.

Prognosis is good, if from a broken rib or a stab it gets well. In Empyema the prognosis depends on the primary disease. This is also the case in Phthisis.

Treatment. We must stimulate the Heart and Respiratory organs. Strap the Chest from the Sternum to the Spine, and put that side at rest. When the Pneumo-thorax is very large, aspirate a moderate quantity of gas, and repeat this whenever alarming symptoms appear.

VI. DISEASES OF THE DIGESTIVE TRACT.

I. THE MOUTH.

I. **Stomatitis.** 1. **Aphthous Stomatitis** is a disease of the mouth, characterized by little ulcers which form on the tongue, or cheeks, and lips. They are the size of small split peas, with slightly reddened rims and whitish surface. There may be only a few or many may be present. They are very painful, and may interfere with taking food in children. Apthæ may be Idiopathic or occur at any period of life in connection with any disease of a grave cachectic character, as Cancer, etc. There are no complications.
Relieve the pain with a 4% sol of cocaine. Heal them by means of Iodoform or $AgNO_3$ washing out mouth with Boracic acid Give Tonics as Iron, Cod emulsion &c.

All forms of stomatitis have about the same Treatment.

They are easily recognized. The ordinary Apthæ of children are easily treated by attention to diet. This is often sufficient for a cure. Or, a tonic, as small doses of Hydrochloric Acid and Pepsin may be given, or a powder of the Subnitrate of Bismuth and Pepsin; and if gastric irritation is marked, Nitrate of Silver in very small doses. Locally, dusting of Iodoform and Accacia is very useful. Light contact with Argentic Nitrate stick, or Sulphate of Copper may be made. In Cachectic Apthæ we rely on local treatment.

Diagnosis. We must distinguish it from Thrush which is a Fungus or Parasitic Stomatitis. It is a disease of childhood and is favored by indigestion and poor nutrition, but its special cause is Oidium Albicans. Its favorite seat is the mucous membrane of the mouth, but it may extend to the Œsophagus. There is much pain in aphthæ. The dead white color and the elevated patch, and the use of the microscope would at once distinguish it from apthæ.

Its **Treatment** requires attention to diet, Tonics and local remedies calculated to destroy this fungus. The spots may be touched with Sulphur or a Saturated Solution of Iodoform and Ether.

Prognosis. The disease is only serious when it is low down in the throat.

Ulcerated Stomatitis. This appears in ill-nourished children, often in asylums, rarely in children of cleanly and well-to-do classes.

Symptoms. The child is irritable, there is fever and great fetor of breath. There is dribbling of fetid saliva and great heat in the mouth. The gums assume a grayish hue. They are swollen and separated from the teeth. ~~It suggests diphtheria and diphtheritic exudation, but it is not a true diphtheria.~~ The glands under the jaw may be swollen. This is a very easily cured disease, but shows no tendency to heal of itself. Sometimes in true Diphtheria the exudation may appear to come from the mouth but it is really in the fauces.

Treatment. Chlorate of Potash exerts a specific action.

℞ Potassæ Chloratis ʒj,
Tr. Cinchonæ Comp. f℥i, f℥vi
Syrup, Zingib. f℥ij. aqua q. s. ad f℥iv.
M. S.: Teaspoonful every three hours.

Give Tinct. Chloride of Iron and Quinia, Brandy and Port Wine. Local applications, as Chlorate of Potash and Borax, may be made with a swab, or the throat touched with a weak solution of Zinc Sulphate or acids.

Gangrenous Stomatitis belongs to ill-fed, ill-nourished and depressed children. It follows on ill-nourished convalescence from Measles and Whooping Cough.

The Symptoms are easily recognized. The disease attacks one cheek and there is a hard swelling. The exterior is glossy and red at the most prominent part. On the inside is an Aphagadenic ulcer, with indurated base, gray and sloughy. Its base is the thickened part of the cheek. The tendency of this ulcer is to perforate. It may spread and denude the bone, leaving a gangrenous hole, exposing the roots of the teeth. The constitutional symptoms are like those of gangrene. There is horrible fetor of the breath, loathing for food, decided pallor. The pulse is running and feeble. There is nervous prostration and decided pallor.

Prognosis. This disease is generally fatal, or if recovery takes place, it is attended with shocking deformity.

Local Treatment is most important. This consists in removing ulcerated portions by the application of pure Nitric, Hydrochloric or Carbolic Acids, so as to promote healthy granulations. The surrounding parts should be protected with lint soaked in oil. Mild applications will

Diseases of Digestive Tract

I Inflammation of mouth or Stomatitis
II .. .. Tongue .. Glossitis (rare)
III .. .. Tonsils .. Tonsilitis
IV .. .. Pharynx .. Pharyngitis

Stomatitis is an inflammation of the mucous membrane of the gums, lips &c

Stomatitis
- Catarrhal
- Follicular
- Ulcerative
- Gangrenous or Cancrum Oris
- Mercurious
- Aphthae
- Thrush

Catarrhal and Follicular Stomatitis brings on no constitutional effects, comes in badly fed children and is a sign of poor feeding. It is not exactly contagious but all the children in a house may have it, hence care should be taken in not allowing children to drink from a cup &c used by a child who has it.

Symptoms - Sore mouth, fetid breath, it affect the mucous membrane of the gums near the teeth & brings on sloughing & finally forming an ulcer. it is covered with a gray matter, is painful and may loosen the teeth

Diagnosis easy - Prognosis - favorable when properly treated

Treatment - must be supporting - Give stimulants quinine, good food, attend to the hygiene

℞ Potassae Chloratis ʒ i.
~~Tr. Ferri chlo.~~
Syr. Limonis f℥ i.
Aquae q.s. ut f℥ IV.
Signa Teaspoonful every 3 hours in water

- We may give a child 3 years old 1 grs of quinine with this if it will take it, but do not join the quinine with the preparation but add it

If you give quinine by the rectum give again as much as by the mouth.

~~℞ Potassae Chloratis ʒ i.~~
~~ʒ~~ see opposite page

Dont give chlorate of K longer than 3 days nor in large doses.

Local treatment - touch the ulcers with a solution of nitrate of silver 10 or 15 grs to the oz. or with dilute nitric acid or dilute HCl; [illegible] or with the following [illegible]

R. Potass chloratis q.s ad Sat.
Tr. Ferri chlo
Glyc
aquae āā ℥ss.
Sig. apply with a brush

Follicular Tonsilitis. May have many attacks, & it's one predisposing to another.

Symptoms are fever, may be a chill then fever rising to 103 or 104°. this is especially in young children. In adults the fever is lower. Rapid pulse.
In nervous children convulsions, may occur or headach
Another symptom is sore throat with difficulty in swalli
The glands at the angle of the jaw are enlarged. The tongue is coated. The tonsils swollen & dotted with white spots

The mucous membrane is unbroken, the white spots being beneath it. There may be a score of the white spots on one tonsil. Only one tonsil may be affected. There is also loss of appetite & the bowels are loose.
After these symptoms, have lasted, 4 or 5 days they disappear. The spots open and in a week or 12 days, the throat approaches the normal. Sometimes yellow spots imbedded in the tonsils, remain for a few weeks.

not do. Pure Bromine has been used with success, but fuming Nitric Acid is best. Stimulants, such as Iron, Quinine and Turpentine, which has a healthy action in inflammations, should be given.

II. THE THROAT.

acute or Follicular

Acute Tonsilitis appears in three forms chiefly, Simple, Herpetic and Phlegmonous, but, as a matter of fact, we consider them under one heading practically. Quinsy

Causes are—1. Early **age.** 2. **Family**; or 3. **Personal Disposition.** Some individuals have dozens of attacks. 4. **Rheumatic**; or 5. **Gouty Diathesis.** 6. **A run-down state of the system** arising from Bad Air, Mal-Hygiene, Overwork, etc. chiefly

The **Morbid Appearances** are seen by a direct Inspection of the Throat. For this the Tongue need not be thrust out. All that is necessary is to depress it with a spoon. Children frequently make no complaint, hence we should always examine the throat, even with entirely different symptoms.

1. In the **Simplest** Cases we have Deep Redness and Swelling. There may be viscid mucus over the inflamed surface.

2. Sometimes we have one or twenty White Points. This is called the **Herpetic Form.** There is no true False Membrane. as in Diphtheria The name of Follicular, or Herpetic, Tonsilitis is a good one. The points may be Unilateral or Bilateral.

3. These points may or may not be present. We have Redness and Violent Inflammation, and we see little patches of False Membrane on the Mucous Membrane. This may complicate Tonsilitis. We give to it the name of Pseudo-Membranous Tonsilitis. It is a rare occurrence, but should be distinguished from Diphtheria. We may have **Resolution**—the little Follicles bursting and healing, or the Swelling may increase and **Suppuration** may take place, and then the Tonsil is hard and unyielding to the Finger. This is known as **Quinsy**. There may or may not have been White Points. Chronic Enlargement may remain. The only associated lesions are those of the Pharynx and Lymphatic Glands at the angle of the Jaw. Those who have had one attack of Suppurative Quinsy are disposed to another. This is also the case with those who have had Herpetic Tonsilitis.

Symptoms. There is often a **Chill and General Malaise.** High **Fever** up to 103° F. and 105° F. The Pulse is rapid. There is Severe **Headache. Pain** on swallowing. Tenderness and Pain at the angles of the Jaw. ~~The Swelling may constitute a **Distinct Tumor.**~~ The **Tongue** is coated and the **Appetite** lost. **Vomiting** is rare. In children the **Nervous** System is sometimes affected. **Sleep** is disturbed. The mind wanders, and there are **Convulsions.** In rare cases **Temporary Erythrema** is not extensive. There may be a temporary trace of **Albumen** in the urine. Disease lasts three or four, or may last seven to eight, days. It is longest when it terminates in Suppuration. The Abscess may not break of itself for ten days. The Symptoms grow worse till this Pus is discharged. The Case may look alarming. The Patient may be unable to swallow.

Prognosis. This Disease always terminates in recovery. Suppuration might open the Carotid, or the patient might die from want of nutrition.

Diagnosis. 1. We must exclude *Scarlet Fever.* This comes on with High Fever, Sore Throat and Swelling of the Glands. For a few hours the two are indistinguishable. Our doubt would be increased if there was a little rash. The throat symptoms of Scarlet Fever, however, don't generally come on till the third day. Here the Swelling of the Tonsil is more rapid. The Fever is not so high, nor the Pulse so rapid, nor are the Nervous symptoms so marked. Herpetic Patches do not appear in Scarlet Fever. ~~Albumen in the urine would be against Scarlet Fever.~~ It is not found during the First Stage of Scarlet Fever. We must not be precipitate in our Diagnosis. If it is Scarlet Fever, the whole family is broken up; and if it be in a school, a panic may spread. 2. Distinguish it from *Diphtheria*. Here we have a true False Membrane, *not* a distention of the membrane of the Follicles. In Tonsilitis the lesions are confined to the Tonsils. In Diphtheria the glands at the angle of the jaw are more swollen. Our diagnosis should be very cautious. The Term Diphtheritic Sore Throat should be abandoned.

Treatment. In cases of Rheumatic Diathesis, Salicylate of Soda is a Febrifuge and Anti-rheumatic. Quinine is undoubtedly useful. It should be given in moderate doses. For a child five years old, gr. v., for an adult gr. xii. If the stomach is irritable give gr. ix. by Suppository. Where there are Herpetic Patches, Guiacum is useful in Emulsion or Lozenges. We may combine Chlorate of Potassium, or we may safely trust ordinary cases to Chlorate of Potassium. Tincture of Iron and Quinine at intervals of three hours.

℞ Potass. Chlorat. gr. lxxx, —— ʒi. ʒi
Tinct. Ferri Chlorid, gtt. clx, —— f℥ii
Acid. Muriatic. Dil. fʒi, –
Syrup. Zingib. f℥ii, — Syr Limonis f℥i.
Aquam, ad f℥iv.
Mft. Sign.: Teaspoonful in water every three hours.

Locally we may use *Externally*, Iodine, and *Internally* Astringent and Sedative applications, as Tincture of Iron, and Glycerine, and Iodoform, dissolved in Ether. Both of these possess positive curative powers. Where there is plenty of Herpes, Iodoform is preferable. Gargle the throat with a saturated solution of Chlorate of Potash. Let pieces of ice dissolve in the mouth. Use the Steam Atomizer with Lime Water, Chlorate of Potash, Borax, Brocacic Acid. As soon as suppuration is expected puncture the Tonsil. An exploratory puncture is often serviceable as helping the Pus to reach surface.

Hypertrophy of the Tonsils is quite common. It may come on suddenly, without any distinct symptoms. It is apt to develop in Rickety and Scrofulous children and patients disposed to Acute Tonsilitis.

Symptoms. The movements of the soft palate are interfered with. The voice has a muffled, nasal and disagreeable character. The patient is apt to become a mouth breather. The entrance of the air to the Pharynx leads to Post Nasal Catarrh. It may interfere with chest development.

The **Treatment** should be *Dietetic* and *Hygienic*—Dyspeptic derangement often lies at the bottom of this disease—and *Local*. The Tonsils may be painted with Iodine or a saturated solution of Iodoform in Tincture of Guiacum. Light applications of Nitrate of Silver, gr. xxx to an ounce. In acute cases we may inject Ergot, Acetic Acid or Iodine into the substance of the Tonsils. If it is hard and riddled with Sinuses it may be necessary to extirpate it, but we should try to save it if possible. After extirpation the base is frequently the seat of inflammation. To build up the strength give Cod Liver Oil with Lime, Iodide of Potassium and Syrup of the Iodide of Iron.

Retro-Pharyngeal or Post Pharyngeal Abscess ~~is frequent in children~~. a rare affection

Its **Cause** is sometimes Idiopathic Inflammation. More frequently it results from some deep-seated trouble, *e. g.*, of the Cervical Vertebræ.

How to distinguish, Follicular Tonsilitis, from,

I Scarlet fever - there is an eruption in Scarlet fever not found in F. T. which comes out in 24 hrs, hence wait a day before making a positive diagnosis,

II Diphtheria. the onset of F. T is more abrupt than Diphtheria, In F. T there are the dotted white spots beneath, the mucous membrane and in Diphtheria there is a distinct patch upon the mucous membrane which may be peeled off.

- Treatment - always put the patient to bed.
Aconite in small doses will reduce the fever, it may be given with Sal. of Soda
If there are billious symptoms give Calomel + Bicarb Soda in small doses 1/5 gr. Calomel to adult 1/12 to 1/20 grs to child every 2 hrs until it acts with 3 or 4 grs Bicarb Soda for adult 1 to 2 grs for child,
— to this we may add Quinine
If the bowels are loose give Calomel with Bi Subnit Bismuth

Quinsy or Phlegmonous Tonsilitis - is a sever inflammation of the substance of the tonsils running on to suppuration and occurring at all ages & predisposing to more attacks The exciting cause is cold when the system is exhausted, Symptoms - sharp fever + very sore throat, on inspection the tonsils are red and swollen + are very painful. Swallowing is almost impossible. The glands at the angle of the jaw are swollen There are no white spots and no membrane, If the tonsils are touched they feel hard and elastic. An abscess forms in from 5 to 10 days. After the rupture the tonsil goes down very fast.
Treatment. try to abort the inflammation & if that is not possible promote suppuration.
To abort give large doses of Salycilates. Aconite for restlessness. Opium for pain, paint throat with Iron or $AgNO_3$.
To promote suppuration use a poultice. gargling with alkaline solutions, Give tonics &c.

Pharynx - much said on Tonsilitis is applicable to the pharynx.

consider the acute & chronic together

Pharyngitis | acute or chronic | Catarrhal. Follicular
Rheumatic
Ulcerative
Phlegmo~~tic~~ nous
Infectious

Catarrhal, - tonsils, swollen, &c. Earache may be associated with pharyngitis & the hearing is blunted. there may be inflammation of the nasal mucous membrane. the pain is not so marked as in tonsilitis neither is the fever so severe.

Acute Pharyngitis lasts about 6 days & is never fatal but it predisposes to more attacks, and thus caused chronic pharyngitis.

Diagnosis, - cough aggravated by Pharyngitis or Pulmonary trouble. by examining the sputa, & the chest.

Treatment - Mild counter irritation. as iodine, lozenges of Chlorate of Am or chlorate of K or if not so severe of tannic acid. Rest the voice &c.

Guaiacum, is applicable, internally or externally both in tonsilitis or Pharyngitis.
May use astringent gargles

Guaiacum is disagreeable but it may be given, with the simple bitters,

Warn the patients that guaiacum is precipitated by H_2O.

R. Potass Iodidi gr 36.
Sodii Bro gr 150.
Ext Belladonnae grs iii.
Glycerine ℥ii
Aquae of mint ℥iii.
Teaspoonful 3 times daily.

This is good in Rheumatic Pharyngitis, & in Rheumatic affections of other joints or muscles.

from an abscess with formation of pus,
Caries, Scrof. & Syphilis &c of bones in adults

will vary with nature of the case.

The **Symptoms** are Local pain and Inability to swallow. More or less interference with breathing, which is less if the abscess is above the glottis. There is swelling of the neck. The disease may continue some time before our suspicions are aroused. The finger may recognize the Fluctuation, or it may be so ~~high up that we can see the abscess itself.~~ low down that [illegible] in a child

not much, interference with the voice

Treatment consists in opening up the abscess with a curved bistoury guarded by adhesive plaster. The condition of the patient may be dangerous till it is cut. Death has resulted from delay. Find out its cause & treat them as tumors.

Diagnosis is easy. We should exclude mere laryngeal trouble and Spasmodic Œsophagus. We can hardly, however, make any mistake except where the abscess is very low down.

Pharyngitis is *Acute* or *Chronic*. 1. **The Acute** occurs under the forms of Simple Catarrhal, Follicular, Ulcerative, Phlegmonous, Gangrenous, and Tuberculous, and the special forms which occur in Scarlet Fever and Diphtheria with Pseudo-Membrane.

Covered

Catarrhal. The parts are swollen, red, ~~injected~~ with viscid mucus, adherent in strings or patches. The Tonsils often sympathize, and the Follicles may be prominent or studded over.

Causes are Atmospheric Changes. Exposure to Draughts. Over-straining of the Voice. The sudden checking of perspiration.

The **Symptoms** are Local Soreness, increased by swallowing and somewhat by talking. A local sense of fullness causing an ineffectual effort at swallowing. Hawking and Removal of Viscid Mucus. There is a little swelling of the glands of the face and neck, but they are not so swollen as in Tonsilitis. There is moderate fever and some disturbance of the pulse.

The **Diagnosis** in adults ~~is easy but~~ in children it may be overlooked from our attention not being directed to the part, and secondly, sore throat is an initiatory symptom of many specific diseases. Caution and reserve are, therefore, imposed upon us for a little time. At the start it is difficult to distinguish Pharyngitis and Diphtheria.

The **Treatment** is very simple. Impress on the patient the necessity for remaining in the house. Young and sensitive children should be restrained to one room or even to bed. *Externally*, various applications may be of service, *e. g.*, Wrapping the throat with a pack of wet cloth covered with Oil Silk or Mackintosh. This relieves the pain and subdues the swelling, or we may bathe it with Chloroform Liniment. *Internally* we may paint the throat with Nitrate of Silver (gr. 20 to the ounce) or with Tincture of Iron (25 per cent. strength) or we may atomize it with either Lime or plain water. If the fever is pronounced give Saline doses and Tincture of Aconite followed by Quinine and ~~Tincture of Iron.~~ We may give a prescription of Chlorate of Potash and Iron. Where there is not much swelling, but great pain, & less fever we might suspect Rheumatism, and we could describe a Rheumatic Pharyngitis. Here use Iodide of Potassium with Potassium Bromide, also Salicylate of Soda. & Quinine

Acute Follicular Pharyngitis is only an aggravated form of Catarrhal Pharyngitis, but is more apt to run into a Sub-acute or Chronic form.

In **Phlegmonous Pharyngitis**, suppuration is apt to occur. It is really an acute Post Pharyngeal abscess. It is very rare.

Ulcerative Pharyngitis is one of the Chronic diseases of this part, and is connected with Syphilis, Scrofula, etc. Syphilitic ulcers may occur in any part of the Pharynx, Tonsils or half arches. They are irregular and often quite large. They eat into the tissue and cause destruction. Afterwards they may heal, leaving white puckered Scars with deformity.

The **Diagnosis** is important. We may detect Syphilis by old Scars in the throat. Patients will show other and Constitutional signs.

Prognosis. If left to themselves, they may eat away the entire Tonsil and both half arches. They may be followed by Cicatrization and union all the way across, producing occlusion ; or the posterior wall of the pharynx may be puckered, and the Œsophagus shut up. As they are not very painful, they are likely to be overlooked.

Treatment, *Internally*, should be a full course of Anti-Syphilitic remedies, *e. g.*, Doses of a Salt of Mercury with Iodide of Potassium or Sodium in moderate doses. *Locally* we require powerful applications of Iodoform, in the form of powder or in a saturated Solution. Next come the Mineral Acids. Then Sulphate of Copper and Nitrate of Silver (gr. xx.–lx. to an ounce), or a few touches with the solid stick. Surgical measures are sometimes necessary, and we must open the ulcers with a Galvano Cautery.

Tubercular Pharyngitis. In a case of tuberculosis, ulceration of the Pharynx may occur. It is apt to be associated with Tubercular Pharyngitis. Generally, Pulmonary Tuberculosis precedes it. We have miliary Tubercles with a shallow, round, irregular, white base, resisting treatment, and very painful. It is rarer in the larynx than in the pharynx.

Treatment. Apply Iodoform and other Alteratives. This relieves the pain and produces an alterative action, which is very useful. Other Alterative applications are useful to relieve pain and prevent progress of the ulcers.

Tinker, [illegible]

Prognosis. They may heal, leaving a scar ; but generally they advance with the condition of the lungs, and terminate fatally. The commonest Pharyngeal troubles are the Catarrhal and the Follicular.

II. **Chronic Sore Throat.** This arises from repeated attacks imperfectly cured, or it may result from long-standing inflammation. The most frequent cause is Mouth-breathing from Nasal Obstruction. This may be **Congenital,** or arise from **over-use of the Voice.** It goes by the name of "Clergyman's Sore Throat" and "Singer's Sore Throat." If the system is relaxed and run down this cause acts with double intensity. The American climate is irritating to the throat.

The **Symptoms** are : A feeling of **fullness** and **discomfort** in the back of the throat, accompanied by frequent hawking and the **discharge of mucus** amounting to a considerable quantity in a day. The **voice** becomes guttural, coarse and thick. There is **morbid sensitiveness** and inability for prolonged speaking. less pain & no fever

Uvula is enlarged, swelling of follicles but not as red as the acute form

The **Diagnosis** is easy. There is no difficulty of recognizing it by the enlargement of the follicles and the excessive secretion of glairy mucus.

Prognosis. It is not a grave disease, but in some cases, if it runs on, it may necessitate abandonment of work.

Treatment. We must search for the exciting cause. This may be a nasal hypertrophy or a post-nasal catarrh. Study the patient's elocution, peremptorily forbidding scraping of the throat. This alone often cures it. Gymnastic exercise, friction, sponging, and attention to ventilation are of inestimable benefit. We may take this affection as an admirable text for relieving general pharyngeal troubles. Administer Tonics, such as Quinine, Mineral acids, and Strychnia, for Systemic relaxation. Where there is much swelling and infiltration, the local application of Mineral Astringents, such as the Sulphates of Zinc and Copper, and Tannic Acid, are useful. The Faradic Current will restore tone to the muscles.

III. THE ŒSOPHAGUS.

The **Œsophagus** is not subject to many affections. The most common are Spasm, Obstruction and Paralysis. Dilatation,

Obstruction causes interference with deglutition

Causes are - 3 in no

I From stricture of tube itself
II From a tumor of the oesophagus, growing inwards
III " " " pressing on the oesophagus,

These causes are often syphilitic or traumatic as swallowing a sharp bone causing inflammation or a caustic substance or acid may cause a stricture

Symptoms - extreme loss of flesh - pass a sound down the oesophagus (oesophageal sound) & thus find the point of stricture.

Diagnosis - Existence - Nature - Locality

In spasmodic obstruction the patient is nervous, & there is not the wasting of organic stricture here we use antispasmodics & tonics

1. In **Spasm** we have a Functional Condition brought about by a slight scratch or by swallowing things too hot, or it may be Reflex, as in Uterine and Gastric troubles, or it may be an accompaniment of Hysteria.

Its **Symptoms** are an **Inability to Swallow.** The patient finds himself suddenly unable to swallow nourishment. The act of deglutition brings on a spasm.

Diagnosis. This condition is recognized by the General History, but more particularly by the fact of an Œsophageal Sound or Bougie passing easily into the stomach. During the spasm the œsophagus grasps it, but lets it pass upon pressure. We can never make a mistake.

The **Prognosis** is favorable.

The **Treatment** consists in the removal of the cause and the administration of Antispasmodics and Tonics; Regimen to get rid of any Hysterical tendency, and the gradual dilatation of the œsophagus by the constant passage of the Bougie. If it is associated with Uterine disease, Counter-irritation over the Ovaries, Uterus, &c.

Organic obstruction may arise from very many **Causes**, *e. g.*—1. **Aneurism** of the Aorta may press the Œsophagus against the Spinal Column. 2. Enlargement of the **Bronchial Glands.** 3. A **Caustic Substance** swallowed by mistake may cause occlusion of the lumen. 4. An **Ulcer** may by Cicatricial Tissue close the opening. 5. **Neoplasms** may obstruct the passage. Of these, Sarcoma and Cancer are the most common. They are apt to be found at points rather high up: at the level of the Larynx, at the bifurcation of the Trachea and at the Cardiac end of the Stomach.

Difficulty in swallowing

Symptoms. 1. Slowly **progressive impairment of Deglutition.** Solids in large, then in small pieces, thick and lastly even thin liquids will not go down. 2. This condition **fluctuates.** These fluctuations are due to temporary irritation associated with spasm. Occasionally the onset is more sudden than would seem possible. A person on sitting down to a meal finds he cannot swallow. A very highly-seasoned or hot article causes spasm and first attracts his attention. In many cases, however, the condition has been imperceptibly gradual, and we must not attach too much weight to the statements of the patient with regard to the abruptness of the onset. 3. Next comes **Pain.** This is worst in cancer. It differs in intensity according to the seat. It may be referred to a point opposite the obstruction. 4. The **Bowels** are obstinately constipated. 5. The **Face** becomes pale. 6. The **Body** wastes. 7. **Food is regurgitated.** The œsophagus becomes dilated above the point of obstruction. Food becomes lodged there, and when it returns it may be mistaken for vomit. 8. If the back is ausculted during swallowing a liquid, we find a point where the ordinary rapid, smooth gurgling is replaced by a **noisy churning sound**, and then followed by that of liquid passing through an orifice.

The **Diagnosis** has reference to—1. Its **Existence.** We distinguish it from **Spasmodic** obstruction by the progressive nature of the Symptoms, by the result of passing the Sound, by the history of the case, and the condition of the patient. 2. Its **Nature.** We must exclude Aortic Aneurism. This condition must always be borne in mind, and before making trial with the Bougie, the Heart and the Ascending and Descending Aorta should be carefully examined. Intra-Thoracic Tumors must also be excluded. Inquire into the history of the case. Has there been injestion of hot liquids? Swallowing of a sharp body? Is there a history of Syphilis? Any hereditary taint? If there is Cachexia, does the presence of Morbid Growths elsewhere justify the assumption of its being of a malignant nature. 3. Its

Malignant growths of oesophagus are generally near the top or near the bottom of that tube

III **Location** is determined by watching the effect of swallowing, and by the careful use of the Œsophageal Bougie.

The **Prognosis** depends on the cause. Even in the case of Cancer life may be prolonged by appropriate treatment.

Treatment is Dietetic. Strict attention must be paid to food. The proper use of judiciously prepared Enemas to maintain the strength. If dependent on syphilis, we should endeavór to check this disease. In all other cases Internal Treatment is not indicated. Dilatation must be practiced. Where the obstruction is from a Neoplasm we can only retard it by keeping the channel patulous. Even in Cancer we may thus obtain increased ease in swallowing. In some cases the use of a false œsophagus made of rubber has been found useful for the administration of peptonized food. The mere pressure of the tube favors dilatation. When the obstruction is very high up, Excision has been performed. Such an operation requires extreme skill, and is often useless. However, the establishment of a Gastric Fistula has been successful in some cases, and promises to considerably prolong life.

III. **Paralysis** of the Œsophagus, *i. e.*, loss of power, arises from a Failure of Vitality at the end of Low and Brain Fevers. It exists as a symptom in Labio-Glosso Pharyngeal Paralysis which arises from an affection of the root of the Glosso-Pharyngeal Nerve. Here it is only a part of a hopelessly progressive condition. Sometimes articulate speech is lost while the Œsophagus still retains its power. After Diphtheria we often find Paralysis of the Œsophagus very troublesome. It may also be present in Hysterical cases.

Symptoms. Food enters the Larynx and induces a fit of coughing. This may be so marked that it is impossible to feed the patient. Sometimes a litttle food may go down.

The **Diagnosis** is made by first excluding obstruction, and then studying the history of the case.

Prognosis. At the end of Brain Fevers patients are rarely saved.

Treatment. Electricity and Rectal injections of food may retard death. The application of insulated conductors to the walls of the chest is important.

(*Continued in Part II.*)

Treatment - Dont pass a sound in Aortic An.

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